AMERICAN VETERINARY REVIEW.

MARCH, 1904.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, January 20, 1904.

VETERINARIANS IN THE ACADEMIES OF MEDICINE.—No one is infallible, and personally I know of many errors which I have committed, and which, had I given more thought to it, I would have avoided. Among the many that I am willing to acknowledge there is one which has in late years been made more evident, and to which I must refer, to caution friends in America who might be tempted to fall into the same error.

Years ago I had been asked to join the Academy of Medicine in New York. I considered the proposal, thought of the good that the veterinary profession might gain by having one of its members among the scientific body, and I consented to have my candidature presented, with the proviso that I would be received, if I was, as a veterinarian, and not as a physician. The result was not long in becoming known: I was beautifully blackballed. No one can enter the Academy except as a physician, and I believe as a physician in practice. A second attempt was made months after by other friends in my behalf, but the conditions being the same, the result was also similar, and I trust that these results were the reason that no veterinarian has yet entered the Academy of Medicine.

Is it so important, it might be asked? Can veterinarians be of some use in an Academy of Medicine?

The attendance that my leisure time has allowed me to give to that honorable body in Paris has convinced me that veterinarians have their place marked in the ranks of such society, that they will find occupations pertaining to the profession among the various committees, and that veterinary science can but gain in elevation, especially in the United States, by such membership.

* * *

In the Academy of Medicine of Paris there are 150 active and 200 associate and corresponding members; these are divided into national and foreign. The active members are arranged into sections, viz.: that of anatomy and physiology, in which I find the name of Chauveau, so well known to all of us; the section of medical pathology; that of surgical pathology; that of therapeutic and medical natural history; that of practical surgery; of pathological anatomy; of obstetrics; of public hygiene; legal medicine; that of veterinary medicine, with Trasbot, the late director of Alfort; Barrier, his successor; Railliet, the learned professor of natural history and therapeutics of Alfort; Meguin, a retired military veterinarian, and Menard, the director of the Vaccine Institute of Paris. There are two other sections, that of medical physics and chemistry and that of pharmacy, with one veterinarian, Paul Yron.

To recapitulate: there are to-day seven members of the veterinary profession belonging to the Academy de Medecine here. And there is yet a vacancy for which there are four candidates. Among the national corresponding members I find the names of six veterinarians—total, 13.

* * *

But, let us see to what special line of work these veterinarians, active members, are called. The permanent committees of the Academy are nine in number. In that of epidemics, veterinarian Meguin belongs; in that of vaccination, Menard; in that of tuberculosis, Barrier; in that of associate members, Trasbot; Chauveau, Railliet and the others are in the committee of corresponding members.

Such is the position of members of our profession in the French Academy of Medicine. I know that a similar condition exists in Belgium, and I have no doubt it is to be found also in other countries of Europe. Why should it not be so in America? Perhaps it is! I do not know; but, if it is not, and if the fault is due to causes similar to the one that excluded me years ago, for the good of the profession, I think veterinarians of America, who possess the degree of M. D., and I believe there are many, ought to apply for admission in the Academy of Medicine with their M. D. title, and once admitted, their D. V. S. or similar degree will soon open their doors for special work.

* * *

EXAMINING HORSES FOR SOUNDNESS.—There is no doubt that too much care and attention can never be taken in these days of progress in surgery; and, no matter how minute and strict an examination is made at the time of purchase, and no matter how conscientious and honest an opinion may have been given, there seems to be always some fear of unpleasant surprise springing out on the poor veterinarian who has been examining a horse for soundness. Of course, much depends on the manner of interpretation of the sound or unsound condition of the animal—condition which may differ entirely when considered under the two professional points of view, that of the doctor of veterinary medicine and that of the doctor of law. These remarks are suggested by an article which I read in the *France Cheraline*, where the decision of a court was given in a horse case. A gentleman had a horse which met with an accident, in which the animal fell down, had his knees broken open, and after some time had such an ugly cicatrix that to be relieved he had to be submitted to the operation for broken knees, invented by a French veterinarian, Mr. Vinsot. This last operation, when properly performed, removes all the ugliness preëxisting and leaves instead a linear cicatrix so perfect that it is almost impossible to detect it, especially when hairs have grown over. This horse was then sold, examined by an authority (a professor in a veterinary school) and passed free from all blemishes. Other

veterinarians examined him later and discovered the cicatrix. The buyer asked the court to decide if he was not justified in returning the horse and getting his money back. The court so decided. It is certainly hard, even if it is just. The accident which gave rise to the original cicatrix did not necessarily imply a defectuous condition of the animal; the almost imperceptible cicatrix of course was there, but was it sufficient to condemn the animal—not as unsound, it is true, but even as a blemished one? My dear colleagues over the Atlantic who have many examinations to make, let me call your special attention to that cicatrix of the Vinsot operation.

* * *

A CHAIR OF DEONTOLOGY.—It may have seemed, well let us say funny, to see in the announcement of one of the veterinary colleges of America, that a chair of deontology had been established. I was personally much pleased when I read that in Philadelphia the new chair had been placed in the hands of Dr. Hoskins. I had made the suggestion years before, and it certainly was gratifying for me to see it inaugurated at last. The same has just been recommended, not only in medical, but in veterinary schools in France. It is suggested that a course of twenty lectures be inaugurated. The recommendation comes after a series of observations made by a veterinarian in which no doubt important breaches of ethics had been committed, not only among veterinarians, between themselves, but in the exercise of their professional capacities, such as the delivery of signed blank certificates, for animals which were supposed to have been examined and had not been visited. Such occurrences have taken place at the frontiers, for instance, where sanitary inspectors are on duty, and are certainly reprehensible in all respects, and it is well that the young generation of veterinarians be educated in the principles which regulate the deontology of all professions, no matter if it is legal or medical, but we believe specially for the veterinary, where so many opportunities may be offered to make one deviate from the straight road, and to forget those professional obligations that one owes

not only to himself, but to his colleagues, to his employer, to his profession, to his country. No, there is nothing funny about it. It may not be a branch of medical knowledge, but one of a higher standing, one which will elevate the individual who possesses it and by him raise the profession to which he belongs.

* * *

A DEBT REPAID.—Several years ago, when the REVIEW was not what it is to-day, I had many occasions to complain of the comparative lack of interest that our colleagues in active practice exhibited towards her. Why don't you write? I used to say. I was urging them with all my might. One day, almost in despair to find a stimulant to obtain records of cases, I read in an English paper, the *Veterinary Record*, if I remember right, a heading to the chapter of records of cases which was printed. I thought the notice good, and inserted it in the REVIEW. Since that day, and ever since, we have obtained from our friends plenty of good records. The notice is there yet, and the cases are still coming—so rapidly that the REVIEW has been forced to double its size to print them.

In a late number of the *Record* there is an editorial headed "The Dearth of 'Clinicals'"—in other words, our friend, Dr. W. Hunting, the able editor, complains as I did of scarcity of material—"of a decided falling off in cases," he said, as I did, "yet we know how many good observers there are in the profession, and how many interesting phases of disease are constantly seen"; and, again, "of course, we have no claim upon our readers, save the old one that if we afford matter for them to criticise they might reciprocate by supplying something for the instruction of others"; and, finally, "What a volume of interest the *Record* would be if each of its readers recorded one case every two years."

All that I said years ago. Will the learned editor allow me a suggestion: Print at the head of his department of cases the notice which is on that of the REVIEW, and which, if my memory is not at fault, was borrowed from him years ago, and has done so well in America. A. L.

VOLUME XXVII CLOSED.

With the present number twenty-seven yearly volumes of the AMERICAN VETERINARY REVIEW are completed, and, as has been the unvarying rule for a number of past years, we are again enabled to say that the one just closing has been the largest and best of any. It will be noticed that there have been printed 1256 pages, exceeding the volume immediately preceding it by 56 pages; the 25th by 210, the 24th by 284, the 23d by 330, the 22d by 364, the 21st by 358, the 20th by 368, and so on almost from the beginning. That is say, the profession of America has contributed very liberally the material which has been encompassed in this large volume, and by its financial support has enabled the publishers to reproduce its contributions. We have all been great gainers by this concerted action, for our readers have received monthly a splendid symposium of contemporaneous clinical experience and scientific thought the world over, and the publishers have had the satisfaction of being sponsors for a magazine for which they do not feel called upon to offer any apologies to any one in all the world. It is satisfying, then, to feel that the veterinary profession of the Western Hemisphere has a representative the equal of any in the English tongue, and that it is full of life and vigor, fully alive to the necessity of keeping right in the front rank of thought and action. A short analysis of the contents of Volume XXVII may not be without interest in this connection. During the year, 77 pages were devoted to the interesting letters from the senior editor, in which he depicted the latest advances made in the veterinary centres of Europe, keeping his readers thoroughly posted upon topics of vital importance in the rapidly unfolding discoveries in the fields of bacteriology and sanitary medicine, the latest ideas and facts in therapeutics and surgery—all delightfully interspersed with chatty talks with his friends, his American colleagues. Editorials upon home topics filled 38 pages, and they were devoted mostly to themes concerning the welfare of the profession, attacking evils which threatened or retarded its ever-advancing tread, or the chronic-

ling of items which denote her upward tendency—all tending to do that which will serve best to safeguard her welfare. The department of "Original Articles" has eclipsed all past records, for there were contributed to this volume 543 pages upon the most varied and important subjects. "Reports of Cases" were never more numerous nor valuable, for there were 104 pages, containing 82 different articles, many of which were enlivened by illustrations, which are extremely helpful to the reader in giving him a better understanding of the description furnished. In the judgment of many, this department is the most valuable one in a medical journal, as it is the basis of our real knowledge, coming as it does fresh from the stall of the patient whom we strive to equip ourselves to serve. The REVIEW endeavors to live up to its title, and in order to place its readers in possession, not only of what is transpiring in professional circles at home, but her collaborators have searched the literature of many lands in pursuit of the best thoughts and most valuable occurrences in foreign countries. Thus a reference to the "Index" in this number will show that they have found a great mass of interesting material in the various tongues; for "German Review" contains 24 extracts; "French Review," 46; "English Review," 44; "Italian Review," 39; Belgian Review," 14; "Dutch Review," 4. Although "Review of Biology" has decreased in quantity, there were 3 articles published during the year. Each number of the closing volume contained a department devoted to the interests of the Veterinary Service in the United States Army, which was largely utilized by those most concerned. The REVIEW trusts that some good has been accomplished, and it will continue to offer its pages for the benefit of this arm of the service, which has been earnestly endeavoring to receive a tardy recognition from the Government. There were 41 communications and articles bearing upon the service published in the twelve numbers. "Correspondence" was well patronized by the profession, for there were 16 communications upon all manner of subjects. Never in veterinary journalism, certainly never in this country, were the

various veterinary medical association meetings so thoroughly reported as during the volume now closed. There were 36 associations represented, either in the recording of transactions, or the announcement of approaching meetings, and to do this 73 separate accounts were necessary, consuming 251 pages. These institutions are the bulwark of our progress, and their publication can have no other effect than to spread the best contemporaneous thought. A distinct advance has been made in the quality of these reports, since more space is devoted to the scientific aspect of the proceedings, and less to the routine of the business. Miscellaneous articles are interspersed through the various numbers upon a variety of subjects, while in "News and Items" the personal side of professional life is sought to be kept alive, mingled with paragraphs which are both helpful and curious.

In summing up the vast array of material which has been furnished our readers, we wish to emphasize the fact that it is to the profession as a whole that they are indebted for this precious volume, for without their assistance such a record would be impossible. If the REVIEW in acting as its mouthpiece has met the approbation of the profession, and has served it intelligently and with credit to them, those who have labored so hard to deserve it will feel fully repaid for their efforts.

MERITED RECOGNITION BY CONGRESS.

The veterinary profession will be much pleased to hear that the Congress of the United States has recognized in an unusual manner the invaluable services of the distinguished Chief of the Bureau of Animal Industry, not only by conferring upon him an increase in salary, but attesting through the report of the House Committee on Agriculture its sense of the deep obligation which is due the recipient. The bill has passed the House in this form, and will doubtless receive the concurrence of the Senate, as the tendency in that body is to increase rather than to cut down the appropriations passed by the House. It is not often that Con-

gress makes such a personal distinction in increasing a salary, and it is all the more glorious since Dr. Salmon is not a politician, and the proposed action is purely a testimonial to his good work and worth. We understand that the recommendation proceeded from the office of the Secretary of Agriculture, without the knowledge of the Chief of the Bureau.

The reference of the Committee on Agriculture to the incident is as follows:

"There are but two actual increases in the statutory salaries and these are not made permanent, viz., $500 to the Chief of the Bureau of Animal Industry, and $500 to the Chief of the Division of Entomology. These increases are in the nature of 'additional compensation' only while the offices are held by the present incumbents, and are considered by your committee as a just recognition of very efficient service rendered by these gentlemen at a time when great industries of this country were very seriously threatened, viz., the great meat industry by the foot-and-mouth disease, and the great cotton industry by the cotton-boll weevil."

WINNER OF THE DOUGHERTY PRIZE.

As the forms were closing for the present number, we received the decision of the judges—Profs. W. L. Williams, James L. Robertson, and Joseph Hughes—as to their estimates of the merits of the essays published in the December and January numbers of the REVIEW in competition for the prize offered by Dr. Wm. Dougherty, of Baltimore, Md., for the best short essay upon the "crab" or "forger," to be competed for as per conditions published in the October REVIEW, page 628. By a majority vote the prize is awarded to "No. Five," and upon referring to the name attached to this essay we find the writer to be Dr. F. C. Grenside, of New York City.

A RECENT work on engineering states that a horse can pull on the worst earth road three times the weight he can carry on his back, on a macadamized road nine times and on asphalt pavement thirty-five times the weight.

ORIGINAL ARTICLES.

CALCIUM SULPHIDE IN THE TREATMENT OF POLL-EVIL AND FISTULOUS WITHERS.*

By Bert Raymond Wilbur, D. V. M., Randolph, N. Y.

Calcium sulphide or sulphuretted lime is a pale gray powder, exhaling a strong odor of hydrogen sulphide, and having an offensive alkaline taste and reaction. It is insoluble in alcohol, very slightly soluble in cold water, and is decomposed by boiling water.

As the salt readily deteriorates and decomposes from exposure to air, it should be kept in tightly sealed containers and should not, therefore, be dispensed in the form of powders with the expectation of obtaining complete and satisfactory results.

In 1869 Dr. Ringer claimed for the sulphides, and for this preparation particularly, the power of arresting suppuration. He recommended the use of one grain of calcium sulphide in eight ounces of water and a teaspoonful of the solution to be taken every hour. To this was ascribed the cure of scrofulous and tuberculous abscesses in human practice.

Its use in human medicine is very extensive and seems to have found considerable favor. It has been described as the best anti-suppurant known, where the condition is not due to syphilis. The mucous membranes being influenced by it and suppurative action checked, as in the early purulent stages of bronchitis and pneumonia, also in nasal catarrh where the secretion is abundant with a tendency toward purulency. As a remedy for successive crops of boils, it is said no agent is superior.

The influence of calcium sulphide, on the suppurative process, is described by Dr. Ringer as follows: "A thin, watery, unhealthful discharge becomes, at first, more abundant, then diminishes and becomes thicker and healthier, like 'laudable pus'; the condition of the sore improving correspondingly, its

* Abstract of a Thesis presented for the degree D. V. M. at the New York State Veterinary College, Ithaca, N. Y., June, 1903.

healing, the while, being promoted. In some cases, any pain that exists is temporarily aggravated, but as a rule, it is speedily mitigated. The general health improves and the debility and feeling of uneasiness and discomfort, so frequently attending these maladies, promptly passes away."

According to Shaller, "the drug is decomposed in the body, the sulphate of calcium passing out in the fæces, and the sulphuretted hydrogen after absorption into the blood is eliminated by the skin and lungs. Because of this elimination by the lungs, this drug produces excellent results in diseases of the bronchial tubes, where the sputum is scanty and tough and where the cough is distressing."

So far as I have been able to find, there are no recorded cases of its use in English veterinary literature, except a few cases recorded in Dr. Law's work on Veterinary Medicine. It is recommended in this work, in cases of purulent nephritis and in inflammation of the renal pelvis. Dr. Law gives one case of an old standing quittor where its administration internally effected a speedy cure. He also recommends it in cases of furunculosis or boils occurring on the digital regions of horses in winter, or where the parts are exposed to street mud containing an abundance of decomposing organic material. In these cases the sulphide was given internally combined with local applications of phenol or tincture of iodine.

The use of calcium sulphide in this research was confined to the treatment of poll-evil and fistulous withers only. In all, seventeen subjects were experimented upon, a few of these (four or five) were not suffering from acute disease but were experimented upon to determine the proper physiological dosage. Doses ranging from five grains to two ounces were tried with varying results. Many of the diseased cases were not under my complete control and received other internal treatment which, within certain limits, rendered the sulphide treatment unreliable. Therapeutic doses have no marked effect upon the pulse, respiration and temperature.

Case one, patient, a black mare weighing about 1050 pounds.

When brought to the clinic there was a fistula on the side of the withers discharging quite freely. The tract was laid open freely and continuous irrigation kept up for several days, in order to allay the inflammation and to get disinfection. After a week the administration of the sulphide was begun, two drachms being given three times a day. Later on, an ounce dose daily was given and still later a two ounce dose daily was administered. The discharge from the wound was quite excessive and a new pocket of pus had developed. The patient ate well while receiving the large doses and the general health did not seem to be affected. The sulphide was also applied locally to the wound, but this seemed to increase the discharge. The medicine was withheld for a week and then resumed in ounce doses. Another pocket of pus had developed in the meantime and this was opened and thoroughly cleaned. Some days later there was still quite a free discharge but the wound was healing slowly. The patient was under observation thirty-nine days. During this time there were no very marked changes in the respiration, pulse nor temperature. The lowest number of respirations recorded were 8, the highest 18; the lowest pulse record was 38, the highest 56; the lowest temperature was 98.4°, and the highest 101.8°. These variations were due not merely to the dosage, but in part at least to a variation in the condition of the animal as a result of the disease. It was observed that no digestive disturbances appeared as a result of the large doses, which seems to be contrary to the experience in human medicine.

Cases two, three and four were of a similar character, except that they received a uniform dosage of fifteen grains of calcium sulphide three times a day. Case three was a cow and was discharged after twenty-three days, but later on was returned for further treatment. Cases two and four were horses and were under observation for thirty-seven and thirty-three days respectively. Potassium iodide was also given internally. In both of these cases it was found that the pus had burrowed a second time after the treatment had begun.

Cases five to eleven inclusive were not diseased but were used solely for experimental dosage. Three of the horses received one drachm doses of the sulphide three times daily. In one of them the temperature and pulse increased slightly above normal; in the other two the temperature and pulse were slightly decreased. In another horse receiving one drachm once a day there was a slight rise in temperature and pulse; but in another horse receiving a half-drachm dose once daily there was a slight decrease. The two remaining horses in this series received five and fifteen grain doses respectively of the sulphide once daily. The temperature, pulse and respiration remaining within normal limits. Although an increase and decrease is referred to above, the variations from normal were very slight.

Case twelve was a sorrel mare weighing about 1000 pounds. This case was purely experimental, the aim being to produce the disease and begin treatment early in the course. Some pus was collected from a patient suffering from poll-evil. Bouillon cultures were made from the pus and 3.5 c.c. of a one-day-old culture were inoculated over the region of the poll of the mare, but a little to one side of the median line. Due antiseptic precautions were taken in collecting the pus and making the inoculation. The day after the inoculation a large tender swelling appeared at the point of inoculation. The mare's appetite declined and the swelling increased in size. The neck became somewhat stiffened and there was evidence of increasing tenderness over the poll. Six days after the inoculation five grain doses of the calcium sulphide were given twice daily. The swelling remained at about the same size but there was evidence of less soreness and the patient ate freely. After five days the dose was raised to ten grains twice daily and three days later fifteen grain doses were given. There was less stiffness of the neck and no increase in the size of the swelling, although it was still quite sore. Sixteen days after the inoculation, a thin watery fluid was discharged from the swelling and a day later a thick creamy pus appeared. On examination it was found that nearly the entire surface of the swelling was necrotic

and the hair upon this surface was loose and easily removed. The mare was confined in the stocks and the abscess freely opened, discharging a half pint of pus. On probing, a fistula was revealed running down the side of the neck, for a distance of five or six inches. The silver probe used in exploring the abscess became considerably blackened, indicating the presence of sulphuretted hydrogen from the calcium sulphide which had been administered.

As much pus and necrotic tissue as possible were removed involving a total area of six or eight square inches. A ring of hair, one or two inches in width, was removed around this area, the hair coming out quite easily. After securing efficient drainage the wound was carefully disinfected and dressed with a pack soaked in a solution of lysol. Subsequent dressings consisted of injections and washings with a solution of echafolta. Internal treatment with calcium sulphide was kept up and in two weeks recovery was complete. During treatment the lowest pulse was 40 and the highest 60. The lowest temperature was 99° and the highest 103°.

Case thirteen was a control of the previous case. This subject was inoculated with the same amount of bouillon culture as case twelve. The swelling appeared the next day and general symptoms coincided closely with those of the previous case. After two weeks the subject was killed and about half a pint of partly inspissated pus was obtained from the abscess. In neither of these two cases was the ligamentum nuchæ involved. Case thirteen received no treatment whatever. At the time of killing there was no indication of *pointing* in the abscess and the pus was less fluid than in number twelve. The inference is that the calcium sulphide, in the previous case, hastened the ripening of the abscess (which was discharging after sixteen days) and stimulated the healing process.

Cases fourteen, fifteen, sixteen and seventeen were regular patients at the clinic and received ten grain doses of calcium sulphide twice daily, except number fifteen, which received a twenty grain dose once a day. This patient also received potas-

sium iodide internally. Two of these cases had received previous treatment outside of the clinic, without success, but yielded readily to the combined local and internal treatment. Case seventeen was under observation one week, but was sent home before complete recovery with directions to the owner as to proper treatment. This was not carried out and the patient was returned later in poor condition and with new pockets of pus forming. The calcium sulphide had been administered but the local treatment had been neglected. This case is cited to emphasize the desirability of maintaining good local treatment. The evidence that the quickest results may be obtained by the proper combination of the two.

As a summary of the observations taken during this work it would appear: 1. Doses of calcium sulphide larger than ten or fifteen grains twice daily tend to increase the discharge and perhaps hinder the healing process. 2. Large doses disturb the temperature and pulse. 3. Large doses, even as high as two ounces daily, do not appear to cause derangement of the digestive system in the horse. 4. Calcium sulphide locally applied increases the discharge. 5. The best effects are obtained when calcium sulphide is used without the administration of other drugs. 6. The administration of small doses of the sulphide (10 grains) appears to lessen the discharge and prevent the burrowing of the pus. 7. Good local treatment is essential, by freely opening the the fistulæ and keeping the wound thoroughly disinfected. 8. A convenient method to administer the drug is in gelatin capsules of the proper size. These protect the drug from the air and will be readily taken by the horse when given with moistened feed. 9. It is best not to administer the drug until the fever caused by the operation has subsided. 10. The patients do not appear to lose condition during the treatment, but tend to increase in flesh. 11. Without a good quality of the drug, no good results can be obtained. Calcium sulphide rapidly loses its properties when exposed to the air.

Acknowledgments for advice and suggestions are due to Drs. Fish, Law, Williams and Hopkins.

IMMUNIZATION AND ITS PRACTICAL APPLICATION.

By L. Van Es, M. D., V. S., State Veterinarian, Fargo, North Dakota.

A Paper presented at the Meeting of the North Dakota Veterinary Association at Grand Forks, Jan. 12, 1904.

Of all the factors which have given the veterinarian a place among the professions, there is none which can equal the importance of the prevention of the microbic diseases.

Of course, a skilful surgeon will always be admired, the services of one who is successful in the treatment of internal diseases will ever be in demand, but at no time is veterinary aid of more value than when a country's wealth of live stock is threatened by some of the communicable diseases. The amount of money saved in that respect, since the profession has been placed on a rational and intelligent footing, is of enormous proportions, and yet science is almost daily widening this sphere of usefulness.

In this great work practical immunization occupies a place only second in importance to the enforcement of sanitary measures, and a short review of its applications and the principles involved will not be out of place at this gathering. The methods of preparing the materials used may also be of some interest, as I fear that this part of veterinary pharmacy and materia medica is frequently neglected by our practitioners.

While processes of immunization are coming more and more into use in medicine, they have nowhere reached a higher degree of usefulness, or are employed more extensively and successfully than by the veterinary branch of the profession.

Immunity has been explained in various ways, but with all the causes summed up, it has not been possible to hit upon the underlying principle in a manner which will set aside all doubt. It is, however, not improbable that immunity will be explained entirely on a chemical basis. It is needless to say, that when speaking of immunization, reference is made to the establishment of acquired immunity. It was noted, long before one had

thought of making practical use of it, that one attack of a certain disease conferred immunity for a time or forever a protection against the same disease. This phenomenon is very marked in Texas fever of cattle and in yellow fever of man. In the majority of methods, used with a view of bringing about artificial immunity, this knowledge serves as a base. In such immunization, we simply cause the animal to have the disease against which we wish to protect it, but by the use of special methods we limit the severity of the attack within such boundaries that fatal results do not occur or are so rare that they are greatly outweighed by the advantage gained. As will be seen later non-fatal attacks can be induced by the inoculation with cultures of the specific microörganisms or with the bacterial poisons or toxins developed in live or artificial culture media.

Another method which, however, must be considered to be in the experimental stage, depends on the introduction of active antitoxines, which are usually obtained from highly immunized animals.

In veterinary practice its uses are yet very limited, but there is no denying that the method is sufficiently promising to induce scientists to further experimentation and to cause practitioners to watch with care the results of the same.

Artificial as well as natural immunity is specifically limited. Immunity conferred against anthrax affords no protection against black-leg. An animal being immunized against Texas fever by having had the disease is by no means proof against anthrax. In cases where immunity is conferred by the blood serum of hyper-immunized animals the same rule holds good. The same animal, however, may be immunized against several diseases and it has been demonstrated by laboratory experiments that the blood serum of such animals is protective against the same diseases, when injected into other individuals.

To a limited extent immunity is hereditary, it being conveyed by the mother's blood. It is, however, not lasting, as the antitoxic principles are soon eliminated from the organism of the young. The experiments of Ehrlich have shown that im-

munity is transmitted by the milk of immune mothers and in this way the congenital immunity is being strengthened. It is not impossible that those facts have some bearing on the resistance shown by sucking calves against Texas fever infection. While calves are by no means absolutely immune they certainly do not succumb to the disease like animals of more advanced age. While practicing in the South, I have seen little calves from non-immune mothers die of the disease, but never witnessed a fatality in those of immune cows.

The oldest method of immunization is that of vaccination against small-pox, in which cow-pox material is capable of protecting man against variola. As long as the etiology of small-pox remains a problem, it will be difficult to explain this phenomenon, but it seems probable that cow-pox is identical to variola, but that by passing through generation after generation of cattle its virus has become so attenuated as to be no longer capable of producing serious disease in man. The light form of small-pox or vaccinia, however, establishes a high degree of immunity.

Perhaps the earliest application of practical immunization of animals was made with a view of checking the ravages of anthrax. In this disease a temporary immunity is secured by the inoculation with attenuated virus, with soluble bacterial products and perhaps also with serum from immunized animals.

The weakening of the virus may be accomplished in various ways, viz.: 1st, by action of heat; 2d, of antiseptics; 3d, of the oxygen of air; 4th, by oxygen under pressure.

The first successful attenuation of the anthrax bacilli was obtained by Toussaint, who exposed defibrinated anthrax blood during ten minutes to a temperature of 55 degrees C, and found that sheep, which received 3 c.c. of this liquid proved to be resistent to a subsequent inoculation with virulent material.

Chauveau continued in this direction and studied the effect of high temperatures not only on anthrax blood but also on cultures in artificial media and by incubation at an initial temperature of 42 and later on heated to 47 degrees for three hours suc-

ceeded in getting a virus which was no longer capable of killing guinea-pigs. He found, however, that when this culture was developed further at a temperature of 37 degrees that the virulence returned. After considerable experimentation he established a method by which a more or less permanent, or rather hereditary attenuation could be secured. The bacillus taken from virulent blood is grown for 24 hours at 42.5, then for three hours at 47 degrees. By reducing the temperature to 37 degrees, spores of a reduced virulence are produced. This culture is now heated for one hour to a temperature of 80 degrees to 84 degrees C, when a truly attenuated virus is obtained.

Roux and Chamberland found that the addition of certain antiseptics has an attenuating effect on anthrax cultures. Bouillon cultures containing a proportion of 1–1200 to 1–600 of carbolic acid gradually lose their virulence. Such a culture when twelve days old is still capable of killing rabbits and guinea-pigs, but those animals experienced no inconvenience when inoculated with a similar culture of 29 days old. Bichromate of potash (1–2000–5000) and sulphuric acid (1–200) have similar tendencies.

It is, however, doubtful if this method of attenuation could be depended on in practice, as new varieties of bacilli seem to develop, which may have lost some of their disease-producing qualities in one animal species, while in another species may be found to be extremely virulent.

Pasteur, Chamberland and Roux experimented in order to produce an attenuated virus by contact with air, but met a serious obstacle in sporulation of the bacillus. The spores are not affected by a mere contact with air. By cultivating, however, at 42 or 43 degrees C. no spores are formed, and a gradual attenuation of the bacteria takes place. Such cultures when twelve days old are harmless to guinea-pigs; when thirty-one days old they kill mice but are resisted by guinea-pigs and rabbits, and when forty-three days old it is no longer virulent to the smallest animals.

When again grown at 37 or 38 degrees C., spores are formed

which have the same virulence as the bacilli from which they are grown. In making the cultures, a maximum amount of culture surface should be in contact with the air.

When anthrax bacilli are grown in an atmosphere of compressed oxygen a reduction in virulence takes place. Chauveau found that cultures grown for four generations at 38 degrees under an air pressure of 117.6 pounds per square inch, were harmless to sheep but were yet capable of killing guinea-pigs. The fourth generation grown under a pressure of 132.3 pounds per square inch no longer killed guinea-pigs. The attenuation thus obtained is practically hereditary, while the virulence slightly increases, it never reaches the point of being dangerous to sheep. When pure oxygen is used, a lesser pressure and a shorter period of growth are required to bring about the desired reduction in virulence. In those experiments it was possible to entirely deprive anthrax bacilli of their virulence and it was shown that such cultures were still able to confer immunity.

In practice, cultures attenuated in the manner described are almost exclusively used. From the above may be concluded that we may select any degree of attenuation which may make inoculation a safe procedure. It must, however, not be forgotten that the more virulent the vaccine used, the more lasting and certain will be the immunity conferred.

The vaccine most commonly used is the one prepared according to the method of Pasteur, Chamberland and Roux.

In immunization by this virus two vaccinations are regarded as necessary. The first vaccine is a greatly attenuated culture, while the second vaccine, which is applied twelve to fifteen days later, consists of a virus in which a certain degree of virulence is retained. For this reason it will be needless to caution against the use of second vaccine before the first one has been given. Of the vaccine prepared by Pasteur's method $\frac{1}{8}$ c.c. is the required dose for adult sheep and $\frac{1}{4}$ c.c. for horses, mules and cattle. It is applied as an ordinary hypodermic injection, selecting in cattle the region behind the shoulder, in horses the sides of the neck, and in sheep the inner side of the thigh.

As a rule the vaccination is not followed by any apparent consequences. Sometimes local swellings may be observed and a few accidental losses have also been observed.

Such losses, however, are slight compared with those experienced in "anthrax countries" before vaccination was extensively practiced. In certain regions cattle and sheep raising would be impossible were it not for this process of immunization.

The immunity obtained in this manner is considered to be complete some fifteen days after receiving the second vaccine, and while its duration may vary in different individuals, we may regard one year as the period of safety.

In anthrax regions it is advisable to practice vaccination in the spring.

In Chili, immunization is produced by the use of a virus prepared by Chauveau's method (cultures grown in an atmosphere of compressed oxygen). By this method only one inoculation is required (dose $\frac{1}{20}$ c.c. for sheep and $\frac{1}{10}$ c.c. for cattle). The results obtained are excellent in cattle, less so in sheep.

While the preceding methods of immunization are those most commonly employed, some interesting results were obtained by the use of toxines produced by the anthrax bacillus.

Professor Law of Cornell University, sterilized anthrax blood by heat (212 degrees) extracted the toxines with water and apparently established immunity by injecting from 2–4 c.c. of this solution. In other hands this method was not quite as successful, but this may be due to the fact that some of the toxines were rendered insoluble by the great heat used in sterilization.

Roux and Chamberland at least obtained promising results by using fractional sterilization at 58 degrees C.

If a method of immunization could be developed along those lines, it certainly would have the advantage of doing away with the use of living cultures. It is possible that by the use of blood serum from hyper-immunized animals, immunity may be established. It will, however, require a large amount of experimentation before a definite method can be developed on this plan.

In black-leg various methods of immunization can be resorted to, although in this country only one protective virus is generally employed.

Immunity is established by active virus, attenuated virus, by the toxines of the specific organism and by serum of immunized animals.

Immunization by the inoculation with an active virus, perhaps, will never be seriously considered in practice as it is not free from danger and is always accompanied by a certain element of risk.

The virus used in this method is the serum obtained from the specific swellings. The dose used is 4–6 c.c. in cattle and 1–2 c.c. in sheep, and must be applied intravenously, as the least infection of the subcutaneous tissue may have very disastrous results.

Thomas, however, obtained good results by the insertion of a thread soaked with virulent material into the subcutaneous tissue of the tail. It is to be presumed that the amount of virus is exceedingly small.

Vaccination with attenuated virus is most extensively used in this country and abroad. Modified virus is obtained by various methods which largely depend on the same principle, namely, the action of the high temperature on the disease-producing qualities of the microörganism.

Arloing, Cornevin and Thomas rubbed up a piece of black-leg swelling in a mortar with a small quantity of water. The resulting mass was then filtered through fine muslin and the liquid is spread in a thin layer on a plate or piece of glass. This is placed in a drying oven at 37 degrees C. It is kept here until perfectly dry. The resulting powder retains its virulence indefinitely.

From this virulent powder, the authors mentioned, prepare a first and second vaccine. In order to do so the powder is mixed with water in the proportion of one to two, and the liquid is divided into two equal parts. One part is heated to 100 degrees to 104 degrees C for seven hours, and constitutes the first

vaccine. The other half is heated in a similar manner to 90 degrees to 94 degrees C and forms the second vaccine. The resulting dry scales contain spores of a modified virulence and before being issued for use must be pulverized to the required fineness.

Kitt has improved upon this method and prepared a virus of which one inoculation is sufficient to obtain immunity. This vaccine is made like the preceding, but is subjected to only one heating, viz.: for 5½ to 6 hours to a temperature of 98 to 100 degrees in a steam sterilizer.

Nörgaard, of our own Bureau of Animal Industry, employs the same method, but heats only to 93 to 94 degrees.

Leclainche and Vallee use bouillon cultures of five to eight days old and heat them to 70 degrees during two hours. One c.c. of this heated virus injected hypodermically constitutes a first vaccine. Seven days later they receive 2 c.c. of a virulent culture, after which they are said to be absolutely immune.

Immunization by toxines has not yet been introduced into practice, although laboratory experiments were made by Roux, which seem to indicate that their success is by no means out of the question. The success of other methods perhaps is responsible for Roux's methods not being further developed.

The same can perhaps be said of the use of antitoxic serum, which was first tried by Kitt. It is to be hoped, however, that the experiments of Roux and Kitt will ultimately yield some practical results, as it cannot be denied that processes of immunization with non-virulent material will always have a great advantage over the use of living virus.

The method of black-leg vaccination most generally in use in this country is perhaps the most practical one. It consists of the simple hypodermic injection of a certain amount of virus suspended in water. The virus as issued by the Bureau of Animal Industry is prepared according to Kitt-Nörgaard method, and although the distribution of it is merely conducted for experimental purposes, the saving of live stock will amount to many millions of dollars.

Other methods are also employed, but as they are all very similar in principle, they will not require special mention.

Immunization against Texas fever is accomplished in this country by the injection of defibrinated blood derived from an immune animal.

The method usually employed, is the following: Under the necessary aseptic precautions a quantity of blood is drawn from the jugular vein of an immune animal by means of a trocar and collected in a sterilized beaker. The blood is now defibrinated by means of stirring it with a glass rod. The fibrine collects on the rod and is shaken off until it has all been removed. The blood is now drawn into a hypodermic syringe and one c.c. of it is injected into the animal to be immunized.

It is recommended to keep the blood warm and not to use it until after it has been drawn for one hour.

This inoculation is followed in non-immune animals in from 6 to 10 days by a rise in temperature amounting to 103 to 106 degrees F, and this fever may continue for several days.

In a number of cases a secondary fever occurs, but the appearance of the febrile stage is not constant. A second inoculation of 2 c.c. of blood is made after the animal has recovered from its first attack of fever. The last injection is usually followed by a very mild type of fever after which immunity may be considered as being established. It is always safer to make such inoculations during cool weather.

Another method sometimes employed in this disease is by infesting calves with a small quantity, say from 25 to 50 ticks. In due course of time this is followed by a febrile attack. When recovery from this has taken place, a larger number of ticks—200 to 400—are placed on the animal in order to establish a higher degree of immunity. This is very slowly established and is sometimes not completed for months.

The good results obtained with the preceding method by Francis, Connaway, Cary, Dalrymple and others seem to recommend it over the tick method.

Immunity against tetanus may be secured by the inocula-

tion with cultures of the tetanus bacilli, with toxines and with anti-toxines. The first method is but little in use and is at present of no practical importance. When old cultures from which the bacteria have been eliminated are injected into an animal from time to time in increasing doses, immunity may be established, especially if the toxines are mixed with a solution of 1–500 of tri-chloride of iodine.

The blood serum from immunized animals contains tetanic antitoxines, and has itself immunizing properties.

When an animal has been so highly immunized that it can bear large amounts of toxine with impunity, its serum can be used for immunization.

From the experiments of Nocard we learn that tetanus may be absolutely prevented by this method of immunization.

In contagious pleuro-pneumonia, immunization is secured by the subcutaneous inoculation of pulmonary exudate and by means of a protective serum.

As far back as 1850 Willems inoculated against this disease, using the serum which oozes from an affected lung. He selected the end of the tail as the seat of inoculation. This was done that in case of too great a reaction, gangrene, etc., the part could be readily amputated.

Nocard in experiments of a more recent date found that inoculation with virulent cultures leads to the same result.

By both methods immunity is established very slowly.

Immunization by protective serum, while proven to be possible, has not been introduced in practice.

The devastation produced by cattle plague has naturally excited a great demand for some reliable method of immunization; and although Koch himself is working on the problem, a rational method has not yet been found. Some result, however, has been obtained. The method which thus far has given some degree of satisfaction is the injection of bile of animals dead with the disease. Koch found that the Boers of Transvaal and Orange Free State employed this method in 1896 and outlined an immunization process based upon it.

Animals which received hypodermically 10 c.c. of fresh bile derived from an animal dead with the disease, withstood after a lapse of ten days an inoculation with virulent blood. The results obtained in practice were very variable and showed that this method was not absolutely safe. Koch advocates the use of a mixture of bile and virulent blood, but the immunity secured is of very short duration. In spite of some bad results by those methods, an enormous amount in animals have been saved by it in South Africa.

In foot-and-mouth disease, immunization, although attempted, has not been successful.

Against swine erysipelas, a disease yet of little interest to American veterinarians, immunization is extensively used in those countries in which it prevails. It is brought about by the use of attenuated virus, by toxines and by anti-toxines.

Pasteur showed that the specific organism, when transferred from rabbit to rabbit rapidly increased in virulence, but the more fatal it became to rabbits the less so it became to swine.

In this way a virus of a given strength can be obtained with immunizing properties. For the sake of safety, a very weak culture is first injected and stronger virus is inoculated 12 or 15 days later. The immunity thus obtained lasts about one year.

Lorenz secured immunity against this disease by employing sterilized cultures, but in practice the method turned out to be a failure.

The same author, however, was more successful in the use of a serum, which seems to produce a passive immunity. This is followed 12 to 15 days later by a vaccine of some virulence.

Since 1880, Pasteur has been able to attenuate the microörganisms of chicken cholera by exposing cultures on a slightly alkaline solid medium. He also observed that cultures, which had undergone a certain degree of attenuation, when transplanted on new media preserved the same degree of attenuation. This weakened virus, when inoculated in susceptible animals has, however, an immunizing effect. In immunization by this method two vaccines are used. As first vaccine a very weak

virus is employed, and this is followed 12 days later by a virulent or a slightly weakened culture. The virus is applied with a hypodermic syringe and given in doses of 1/8 c.c. In spite of the efficiency of this vaccine, its use has never become very extensive.

There are few achievements in applied hygiene which have been received more gratefully than the discovery of an immunization method against rabies, and there are but few lines of research which are more interesting than those dealing with experimental vaccination against this disease.

Galtier injected virulent saliva into the jugular of seven sheep without producing rabies, and when one of the sheep was later on inoculated with the saliva of a mad dog, it appeared to be immune. He later on reports the same results in nine sheep and one horse.

Nocard and Roux repeated those experiments with virulent brain tissues and obtained the same results as Galtier.

The application of this method showed favorable results in sheep, goats, cattle and horses. In the first three species mentioned, immunity may be secured when the injection is made within two days after the animals have been bitten. It is less satisfactory in horses.

It seems that those experiments point to something promising in veterinary practice. If a number of sheep or cattle have been bitten, and if the original rabic animal can be secured, intravenous injection of freshly prepared virus may be instrumental in reducing the high mortality. In fact the method has been applied by Nocard with encouraging results. The technique is as follows: virulent material (preferably the medulla oblongata) is rubbed with some water in a mortar under the best aseptic conditions possible, and is then strained through a fine cloth. Of the milky liquid, cattle receive 10 to 15 c.c. and sheep 4 to 6 c.c. into the jugular. In this manipulation care must be taken that no material is introduced into the subcutaneous tissue or in the wall of the vein, as such an accident would have the same consequences as a rabid bite. The needle therefore should be introduced into the vein first, the syringe being attached when

the flow of venous blood shows that the vein has been penetrated. After the inoculation, the animals should be kept quietly in a stable for a month at least.

Pasteur has shown that when the virus of rabies is passed through monkeys it undergoes a certain attenuation and that dogs could be immunized with such virus.

In 1885 Pasteur, Chamberland and Roux announced that virulent medullæ when exposed to a drying process gradually lose their virulence and that repeated inoculations with an emulsion of dried material confer immunity.

On their observations is based the Pasteur treatment by which immunity can be established before the period of incubation, in the persons bitten, has ended. In the Pasteur treatment emulsions of increasing virulence are employed, the degree of virulence being regulated by the length of the drying process.

The use of virus heated to 58 degrees C. has also given very good results in man, while the inoculation of diluted virus has not passed the experimental stage.

Behring is at the present time engaged in an experiment which promises results, of which the value cannot be sufficiently appreciated, namely the immunization against tuberculosis. His work at the present time is confined to the immunization of cattle, and the results obtained thus far indicate the ultimate success of his method.

It has been found by all who ever worked with the tubercle microörganism that it gradually loses its virulence when kept under cultivation on artificial media for a long time. When one milligramme of an old culture on serum is injected into the jugular vein of a calf of 5 to 7 months old, the animal is able to resist one month later a dose 25 times greater.

The usefulness of Behring's method is now being tested on a large scale and it will be interesting to watch the results.

De Schweinitz and Schroeder, of the Bureau of Animal Industry, recently published some of their observations with this method and showed that the immunizing bacteria remained intact for considerable time.

While they apparently obtained immunity, they caution against the general application of a method by which living bacilli are so long preserved in the tissues.

The inoculation with tuberculine or sterilized cultures of the tubercle bacillus does not result in immunity. The same can be said of the use of antitoxic serum.

In dealing with glanders all attempts at immunization have thus far failed. This is probably due to the difficulty met in attenuating the specific bacterium sufficiently so as to allow its injection into susceptible animals.

WEST BOWEN, an old-time "veterinary" of Brooklyn, N. Y., died last month following a stroke of apoplexy a month previously, aged 82 years. He began practice in Brooklyn just after the Civil War, having served throughout that conflict. A generation ago the deceased enjoyed quite a lucrative practice, but his profligate habits and "sporty" proclivities gradually destroyed his opportunities and estranged him from his family, which was quite well-to-do and eminently respectable. At the time of his last illness he lived in a dirty room in a stable which had been his "hospital" for many years, the only furniture adorning his apartment being a bed, a chair, and a stove without a chimney. West Bowen was a celebrated character and local sport for many years, but he possessed but little ability as a veterinarian. His name frequently figured in the newspapers, and an interwiew which appeared in the New York *Journal* some years ago was fairly illustrative of the quality of his veterinary attainments. The reporter remarked to him that in his long career he must have gathered a great deal of information regarding the horse, to which the doctor thoroughly agreed. The interviewer further said: "Doctor, you must know every bone and muscle in the horse." To this he again acquiesced. "Doctor, how many bones are there in a horse?" "Why," said Bowen, "that depends on how big he is." Bowen kept hanging in his office two lumbar vetebræ from a horse, which he proudly exhibited to all who visited him, explaining that he had removed them from a patient because he was too long-coupled, saying: "He was too long, too long. I just shoved him up a little." To make the story more convincing he declared that the horse was working every day, and he volunteered to show the animal to any one who might doubt his statement.

THE LATEST OBSERVATIONS AND EXPERIMENTS ON THE TRANSMISSION OF BOVINE TUBERCULOSIS.

By D. Arthur Hughes, Ph. D., D. V. M., Cornell University; Government Inspector, East St. Louis, Ill.

I. TRANSMISSION OF BOVINE TUBERCULOSIS TO MAN.

Though it is gravely to be doubted whether the latest observations and experiments on the transmission of bovine tuberculosis to man are of any intrinsic value in themselves, yet the account of them will inform us of what work has been attempted, and the recent thought offered in explanation of results. Men's fears often lead them to jump, in a womanish way, to the wildest conclusions. There cannot be any greater fear than that of the possible encroachment of bovine tuberculosis upon man. It seems likely that such an infection is possible; hence it behooves us, as veterinarians, to look to the public welfare in this matter. Still, as yet, there is no proof, worthy of the name; no sufficient data, from which scientific men, as a body, can conclude absolutely that bovine tuberculosis to a certainty harmfully infects man. If bovine tuberculosis is of great danger to the very life of man, as future research may prove, the experiments conducted and the observations made during the last two years do not help us much in proving it.

(1) *The communication of bovine tuberculosis to man through wound infection.*

A number of such wound infections have been discussed during the last year or two by writers abroad and at home. C. H. H. Spronk and K. Haefnagel (*La Semaine Méd.*, Paris. Ann. 22, No. 42; Oct. 15, P. 341–343) reported the case of a butcher accidentally wounded May, 1900, in the finger while assisting in inspecting the tuberculous organs of a cow. The wound healed promptly, but later the finger presented evidence of infection. In February, 1902, Professor Nareth extirpated the affected portion of the skin, together with the tumefied cubital ganglia. The tuberculous character of the lesions was

demonstrated by microscopic examination and by inoculation of guinea-pigs, and an emulsion made from the spleen of one of these pigs was used to inoculate a calf previously tested with tuberculin, and the animal placed in a newly constructed stable, with the result of producing general tuberculosis as demonstrated by the presence of giant cells and numerous tubercle bacilli. Finally two guinea-pigs which had been inoculated with material obtained from this calf, died of tuberculosis.

Krause (vid. Salmon, Amer. Public Health Assoc. Report, 1903), reports the case of a butcher, aged thirty, with a good family history, whose duty it was to remove diseased parts of cattle killed for food. The infection was located in the right arm, and was attributed by the man to a splinter of wood run into the right thumb three years ago. Immediately after the accident he had removed the hide from a sick cow. Pieces of gland and skin from the arm proved on examination to be tuberculous.

Lassar ("Ueber Impfluberkulose," *Deutsche Med. Woch.*, No. 40, Oct. 2, 1902, pp. 716–718) reports thirty-four cases of verrucose tuberculosis following wounds in 108,000 patients, but only four of these were butchers. Later he examined 365 men employed in abattoirs and found seven suffering from inoculated tuberculosis, while three others he considered as possibly affected.

In America, Professor Ravenel, of the University of Pennsylvania, reported four cases of verrucose tuberculosis of bovine origin (*Medicine*, Detroit, July, August, 1902. Transactions of the British Congress on Tuberculosis, July, 1901, Vol. I., pp. 91–92).

(2) *Wound infection followed by generalized tuberculosis.*

In no one of the recent cases cited above from foreign and American scientific literature, is it stated that the wound infection resulted in anything more serious than entirely localized tuberculosis verrucosa cutis. Such cases can have very little value except to the dermatologist. It is only when it can be proved that tuberculosis verrucosa cutis is an incipient tuberculosis pointing to an oncoming generalized tuberculosis; or when

it can be shown that generalized tuberculosis ensued from wound infection that such cases become of moment to the veterinarian or sanitarian. One case is reported recently which seems to point to a generalized tuberculosis resulting from wound infection.

Troje (*Deut. Med. Woch.*, March 12, 1903) reports the case of a young, healthy male, who gave no personal or hereditary history of tuberculosis. He was inoculated with bovine tuberculosis in the hand, and a typical lupus lesion developed on the site of inoculation. Subsequently the lymphatic glands which drain the involved region became tuberculous, and in course of time many other lymphatic glands throughout the body became similarly infected.

Few such cases have been reported in medical literature at any time; and it well may be doubted whether the fallacy *post hoc, ergo propter hoc* has not crept in here. How are we to know, for instance, that tuberculosis of the glands in this case was not a "natural" infection and not a result of wound infection, through the lungs or another channel instead of the capillaries or lymphatics of the skin? Such is the ignorance of bacteriologists at present on the differentiation between the bacilli of bovine and human tuberculosis that doubt must always be admitted. Because generalized tuberculosis follows a wound infection caused by bovine tuberculosis in nowise proves the wound-infection the cause of the generalized tuberculosis.

(3) *Reported transmission of bovine tuberculosis to man through milk.*

Similarly a little honest and healthy doubt may be had on a recent case of infection reported by Hüls ("Zur Frage der Uebertragung der Rindertuberkulose auf den Menschen," *Münch. Med. Woch.*, No. 24, June 17, 1902, pp. 1003, 1004). He reports the case of a wealthy miller's family composed of the wife, five sons and two daughters, Herculean in stature and boastful of strength and health. Consumption had never occurred in the family of either parent. Of the family all but two died from consumption within a few years, and even one of the

surviving sons was treated for a tuberculous abscess of the finger. The author states all were afflicted subsequently to the introduction by the miller of a herd of Simmerthal cattle on to his farm, which were nearly all infected with tuberculosis. It does not follow that the infliction of the family was caused by the milk of the cattle because the disease became fatal subsequent to the time when the cattle were bought. Hüls does not exclude other possible sources of infection before proceeding to prove infection from the milk. His statement is only supposition at best. Though the miller's family was "Herculean in stature" it cannot be that they used the milk of the whole of the Simmerthal herd. Can it be, then, that others were not infected by the same milk? This question is not answered. If this could be proven an argument of greater weight could be used against bovine tuberculosis in this case. There is a possibility amounting almost to a probability, that bovine tuberculosis is to be blamed in cases like this. But thus far, as in the case cited by Hüls, the statistics touching such cases in medical literature have hitherto been open to grave objection. The reports of cases in which it is urged that there has been a transmission of bovine tuberculosis to man have all indeed, of late, been very faulty. There is no doubt whatever, that bovine tuberculosis is open to the gravest suspicions as a source of infection for man. Nevertheless, we are never going to have statistics on this question which will be fit for anything but ridicule, unless we sharply distinguish between demonstrated fact and cheap opinion, between science and pseudo-science.

II. TRANSMISSION OF HUMAN TUBERCULOSIS TO CATTLE.

In the face of Koch's experiments and despite his statements, it is becoming more and more apparent that human tuberculosis is communicable to cattle. Experimental infection of animals with the disease is one thing: natural infection another. Nevertheless, a symposium of the earnest experimentation of scientists is worth the having, for by experiment most of our progress has been made. The possibility of transmission of human tuberculosis to cattle has been tried by

Nocard and Arloing among the French writers, Thomassen and De Jong among the Belgians, Orth, Stenström, Max Wolff, Johannes Fibiger, C. O. Jensen, Von Behring among the Germans, and De Schweinitz, Mohler and Ravenel in America.*

Nocard (*Presse Vét.*, Angers Vol. XXI., Nov. 30, 1901, pp. 398–403) states that from his experiments he believes cattle are not to human tuberculosis.

S. Arloing ("L'inoculabilité de la tuberculose humaine et des idëes de M. Robert Koch sur cette tuberculose et la tuberculose animale" *Bull. Acad. de Méd.*, Paris, Vol. LXVI, No. 43, Dec. 24, 1901, pp. 897–911), reports experiments with three different cultures of human origin. One of these had been in the laboratory since 1896. . . . . Intravenous injection with an emulsion of this culture in a heifer calf, two sheep and a kid conveyed the disease, as the autopsy demonstrated tuberculous lesions in all these animals.

Thomassen ("The Receptivity of Bovine Animals for the Bacillus of Human Tuberculosis," Transactions of the British Congress on Tuberculosis, London, July 22–26, 1901, Vol. IV, pp. 21–27), reports an experiment in which a calf was inoculated in the anterior chamber of the eye with a pure culture of tubercle bacillus isolated from a case of tuberculous arthritis in man. When killed, after six weeks, both lungs were found to contain numerous miliary tubercles and some grey fibrous tubercles of larger size. The path of infection from the eye could be traced by the lymphatic glands.

De Jong ("Experiences comparatives sur l'áction pathogène pour les animaux, notamment pour ceux de l'éspèce bovine, de bacilles tuberculeux provant du bœuf et de l'homme"—abstract in *La Semaine Medicale*, 1903; also *Le Recueil de Méd. Vét.*, 1903), reports a series of inoculations in seven bovine animals, calves and steers; all became tuberculous by the injection of tubercle bacilli of human origin. In one the disease was extensive; in four others it had a retrogressive tendency; and in two it was progressive.

* Vid. Kober, *American Journal of Medical Sciences*, Oct., 1903.

J. Orth ("Ueber einige Zeit-streitfagen aus dem Gebiets der Tuberculose," *Berl. Klin. Woch.*, Aug. 25, 1902, pp. 793–978), showed by inoculation experiments on cattle that a progressive fatal tuberculosis was produced in the animals by material of human origin.

Olof Stenström ("Die Tuberculose des Menschen u. der Rinder, *Zeitschrift f. Thiermed.*, Band VI, VII, Heft IV, 1902, pp. 282–291), found from experiment that it was easy to infect cattle with tuberculosis of human origin.

Max Wolff ("Perlsucht und menschl. Tuberculose," *Deutsche Med. Woch.*, 28 Jahr., No. 32, Aug. 7, 1902, pp. 566–570), reports inoculation from cases of primary tuberculosis of the intestines in man, from which he concludes that pearl disease of cattle may appear in man.

Johannes Fibiger and C. O. Jensen ("Uebertragung der Tuberculose des Menschen auf das Rinder, *Berl. Klin. Woch.*, 39 Jahr., No. 38, Sept. 22, 1902, pp. 881-886), inoculated calves subcutaneously with tubercle bacilli of human origin and had important lesions in three. They consider that they have disproved the idea that tuberculosis of cattle is not virulent for man.

Von Behring, P. Romer and G. Ruppel (*Tuberculose*, XVIII, p. 90, Marburg, 1902). A cow was inoculated Nov. 26, 1901, with a tuberculous culture of human origin after a single passage through a guinea-pig, and on Jan. 14, 1900, the affected eye was enucleated and a pure culture was obtained from it after one passage through a guinea-pig. The cow at the close of the report was gradually losing ground.

De Schweinitz (see Salmon's Report to the Amer. Public Health Assoc. Meeting, 1903—not yet printed) has produced generalized tuberculosis in calves by inoculating them with cultures obtained from the mesenteric glands of children dead from tuberculous peritonitis.

Mohler (see same report of Salmon) has shown that as virulent tubercle bacilli of human origin can be obtained as that of bovine origin.

M. P. Ravenel (*Medicine*, Detroit, 1902, Vol. VIII, No. 7, pp. 529–546; Aug. No. 8, pp. 617–632), reports that he fed four calves with human sputum, and post-mortem examination showed that all had been affected with tuberculosis, the lesions in two being extensive. His inoculation experiments in calves and cows with cultures obtained from the mesenteric glands of a child which died of tuberculous meningitis proved very virulent for bovine animals.

These experiments and observations on the transmission of human tuberculosis to cattle represent the kind of work that is being done by those hard at research in these matters. There is a deep-rooted purpose among experimenters to discover the exact relation between the diseases. It may not be in our day, but some day we shall certainly know the exact relation between the diseases—and that beyond cavil or controversy. The question is one which strictly pertains to veterinary medicine; for it is a question of the relationship between animal disease and human disease. The solution, in any event, will revolutionize sanitary medicine in its application to the disease. The zest for discovery here, explains itself. The gratitude of his fellowmen and no conditional immortality is the reward for the discover.

DR. W. P. HILL, 12th U. S. Cavalry, in a letter to the REVIEW, dated Batangas, P. I., Dec. 26, says: "We have had no surra here for a year (Batangas Province), though it is still in Manila. The swamp-grass theory seems to be generally discredited here now, the fly being the only acknowledged transmitting agent."

ANIMALS WITH MANY EYES.—Many animals possess more than two eyes which do not act together. A leech, for example, has ten eyes on the top of its head which do not work in concert, and a kind of marine worm has two eyes on the head and a row down each side of the body. Some lizards have an extra eye on the top of the head, which does not act with the other two. A bee or wasp has two large compound eyes which possibly help each other, and are used for near vision, and also three little simple eyes on the top of the head, which are employed for seeing things a long way off.

THE ORIGIN OF PULMONARY TUBERCULOSIS, AND THE PREVENTION OF TUBERCULOSIS.

EXTRACT FROM A LECTURE, BY PROF. E. V. BEHRING, DELIVERED BEFORE THE GERMAN SOCIETY OF NATURAL HISTORIANS.

TRANSLATED BY A. EICHHORN, D. V. S., BUREAU OF ANIMAL INDUSTRY, MILWAUKEE, WIS.

Behring speaks of his conviction that human pulmonary tuberculosis originates from tubercle bacilli passing through the intestinal mucous membrane into the system in the earliest childhood. The latest experiences indicate that there is hardly a person who escapes through life an infection of tuberculosis.

Naegeti in Zurich, to convince himself of this standpoint, made careful autopsies on very numerous bodies, and found, that in all people, dying after the age of 30, traces of a previous tubercular infection were present. In the ages between 18 to 30, 96 per cent.; from 14 to 18, 50 per cent.; from 5 to 14, 33 per cent.; from 1 to 5, 17 per cent., showed tubercular changes, while the children below one year were free of the disease. Franz tested with tuberculin the men of the 1st Bosnish Herzegovina regiment, and also those of the 60th Hungarian infantry regiment, and found that of those in their first year's service 61 per cent., and of those in their second year's service 68 per cent. reacted, despite the fact that the quantity of tuberculin injected was 1 to 3 milligrammes and only in exceptional cases 5 milligrammes (had there been used one centigramme in all probabilities the percentage would have been considerably higher). Berend in Budapest on the other hand, could not obtain a reaction in 96 young children by increasing the dose to 1 centigramme.

With such a distribution of tuberculosis, it is impossible to think of an isolation of all infected people, and this could only be considered with those affected with coughing pulmonary tuberculosis. A tubercular infection, on the other hand, does not mean a tubercular lung affection; on the contrary, the great frequency of the former, compared to the latter, indicates a fre-

quent natural recovery from local tuberculosis. Up till now there is no positive evidence by which it could be established, that grown-up people could infect themselves with tuberculosis by simple inhalation. Heredity is also, from a practical standpoint, of little importance, not even regarding the hereditary predisposition.

Outside of infections from the uterus, the following rule can be laid down: *The chief source of tuberculosis is the milk taken by the nursing child.* This harmonizes with the fact, that in the baby when nursed, and also in the sucking animal, the intestinal mucous membrane is practically in condition for infection. In young animals, genuine proteids of large molecules (as well as the diphtheria and tetanus serum), are passing unchanged through the intestinal mucous membrane, in the same manner as if they had been injected into the blood current, while in older animals, they have to be converted into peptones before absorption can take place (Roemer). These facilitated absorptions are due to the fact that the intestinal mucous membrane in the young is not quite covered with a uniting epithelial layer, and also that the secretion of ferments from the glands is imperfect. Anthrax bacilli, administered in milk to guinea-pigs, before they are eight days old, will pass through their intestines into the blood without any interference, while the intestines of older animals expel them in a short time. By feeding a few tubercle bacilli to guinea-pigs, only a few days old, they will soon develop lesions of the infection in the mesentery, and also on the peritoneum, near the cæcum, numerous submiliary tubercles will appear. Later on, the glands of the head and neck will become infected, and finally pulmonary tuberculosis will develop, which till now was thought to be due to inhalation.

From these experiments one can conclude that pulmonary tuberculosis in men and animals is due to an intestinal infection in the very young. An infection originating as described can remain latent in the system, through many years, until sooner or later, under the various favorable conditions, will begin to

develop, and in many instances eventually cause pulmonary tuberculosis. In infected families, there are ample opportunities for infecting the babies' digestive tract with the coughed up and expectorated material. The susceptibility for the infection is always increased in the young as well as older, in such general and intestinal diseases in which the epithelia of the intestinal mucous membrane is diseased or injured. In connection with this, in guarding against tuberculosis, one must aim first of all to give milk to children free from tubercle bacilli, and also that later in life through a properly regulated mode of life, a disturbance of the intestines should be guarded against.

Tuberculosis, among cattle, which in principle is identical to human tuberculosis, is also very extensively spread, which is proved by the properly applied and reliable tuberculin test. The infection in cattle also occurs in the very young, while the spontaneous recoveries are here also very frequent. Cattle tuberculosis is kept out of many herds by the successful application of Bang's method, while during the last few years, Behring's immunizing inoculations are extensively applied, of which the results will soon be published, from which conclusions can be drawn as to its value.

The experiments just carried on also authorize the conclusion that the milk of highly immunized cows contains immunizing material, *by which in all probability the milk of such cows will be used for immunization of children.* B. has no doubt that with the introduction of relatively harmless tubercular virus into the human system, the same way as in cattle, an isopathic immunity can be produced. But for this purpose it will be necessary to produce, by a proper method, an attenuated virus. On the other hand, the introduction of living virus into the blood of human beings is always considered serious, and one must think whether immunity could not be produced through feeding of a proper virus. Outside of this, it may also be possible to introduce the living virus, together with the milk containing the protective substances, which in some other infectious diseases proved very beneficial.

Regarding the question as to the identity of human and bovine tuberculosis, B. states that he considers the producers of the two diseases as the same, in such comprehension that they are of the same species, but regarding their virulence of a different variety. This is explained by the fact that cattle can be immunized with human tubercle bacilli. The statement of R. Koch, that bovine tuberculosis is of no danger to the human beings, was proved to the contrary from many sides. The milk from the affected animals, also the butter derived from their milk, cannot be considered as very dangerous, as it is chiefly consumed by adults; on the other hand, one cannot emphasize enough the danger to children from taking milk containing tubercle bacilli, no matter whether derived from cows or human beings.

CANNOT PRACTICE CHRISTIAN SCIENCE ON ANIMALS.—The Texas District Court at McKinney has decided against Christian Science as the proper treatment for animals. The case came from the County Court in a suit brought by a farmer of Collins County against the Houston and Texas Central Railroad for so injuring his horses with a train that they died. The testimony was straight, and it seemed that the plaintiff would win his contention without a doubt. He went on the stand in his own behalf, and what he said in answer to questions strengthened his case until the attorney for the railroad asked him what treatment he had given the horses. He answered that he had given them the Christian Science treatment only. He had prayed for them, but had put nothing on their wounds and had done nothing to relieve them. The jury returned a verdict for the railroad company.—*Exchange.*

THE value of cattle imported into the United States during the calendar year 1903 was $644,769, of horses $1,472,420, of sheep $853,413, and of all other animals $714,487, making a total value of all animals imported of $3,685,089.

THE value of all animals exported from this country during the year 1903 was $42,551,174. This includes cattle to the value of $37,725,452, hogs to the value of $53,180, horses to the value of $3,142,731, mules to the value of $354,776, sheep to the value of $1,153,770, and all other, including fowls, to the value of $121,265.

OXYGEN TREATMENT IN PARTURIENT APOPLEXY.

By Frederick R. Whipple, M. D. V., Kewanee, Ills.

I have used the Schmidt or potassium iodide treatment in the above-named disease nearly two years, most always with good success, as far as relieving the original trouble; but so often complications would arise, caused by injecting the irritating iodide into such a delicate organ as the udder, causing quite often a purulent inflammation, and occasionally followed by the death of the patient; then, again, the secretion of milk would so often be diminished that it would not pay the owner to milk the cow, and, in 50 per cent. of my cases the secretion of milk would fall short from one to two quarts per day. The above and several other complications led me to order an oxygen tank complete, with inhaler and milk tube, the results of which I am more than pleased with. I have so far treated about fifteen cases, and never have had a complication to follow from the effect of the oxygen. Then the oxygen treatment is so simple. With the Schmidt treatment, after making a diagnosis of parturient paresis, the first thing was to call for a quart of boiling water, then wait until the kitchen fire was built and water heated and cooled, which would often take an hour (valuable time lost if the veterinarian is in a hurry to make another call, or behind ten or twelve hours with rest). But with the oxygen treatment it is altogether different; one can complete the treatment in fifteen minutes.

I first remove all milk, wash udder in strong solution of zenoleum, afterwards in a solution of bichlorid mercury (1–500), dip tube in same solution and insert milk tube connected with rubber tubing to oxygen tank, turn on the oxygen and inflate the udder with the gas until tense. If the cow is not up in eight to twelve hours I repeat the oxygen. The only other treatment I give is warm injections per rectum every three to four hours, and draw urine. It is only in three or four cases have I found three injections of oxygen needed. I look for my patient to be up in a few hours after the second injection.

Case No. 9.—Jersey, second calf; she was fed bran-mash during the day; next morning she appeared weak to owner, and by noon was down. I was called and diagnosed parturient paresis; administered the oxygen treatment; returned at 8 P. M., found cow much brighter; bowels and kidneys active; repeated oxygen, and next morning cow was up, well as ever.

Case No. 10.—Grade shorthorn; six years; had given birth to twin calves; retained afterbirth, which I was called to remove on second day. Next morning owner found her down with symptoms of milk fever. I was called and arrived about 9 A. M. Gave oxygen; called again at 8 P. M.; could see no change in her condition; repeated oxygen. Also again at 8 A. M.; she appeared now much better, and drank pail of water; had movement of bowels during the night; about the middle of afternoon she got on her feet. I called during the evening and gave one pound of magnesium sulphate, and two ounces of oil of terebinth, and left a few doses of strychnina. In a few days she was returned to the herd.

Case No. 11.—Grade Jersey, four years; gave birth to extra large calf; owner assisted her in labor; was down five hours after delivery of calf; was treated by self-styled "cow doctor" until next day, when I was called. Gave oxygen treatment and repeated next day. In three hours after second injection cow was up and eating.

Case No. 12.—Jersey, kept in city; has stood in barn all winter; only exercise was in lot about twelve feet square; fed on bran, oats and clover hay. Four days after birth of calf owner found her down, but able to rise. I was called and gave injection of oxygen. After about four hours she appeared well; except not eating; gave one pound of magnesium sulphate in drench. Next morning she was ready for her feed.

Now, I do not wish to try and discourage those using the potassium iodide treatment, but will advise those that are not satisfied with it to try the oxygen, and report their experience with it.

NERVOUS GOATS OF TENNESSEE.

By Mark White, Jr., Class '04, University of Pennsylvania, Jan., 1904.

Paper read before the Veterinary Medical Society of the University of Pennsylvania.

There is nothing to be found in veterinary literature or elsewhere on this particular breed of goats, therefore, I feel I am giving to our profession some fresh material to put in their note books. I think also that it would be worth your while if ever in Tennessee to make it a point to see a flock of these remarkable goats, in order to wholly appreciate this strange phenomenon. These goats also go by the name of "stiff-legged" or "fainting" goats by the people in the neighborhood where they are found, being viewed with considerable interest as well as curiosity.

The true history of this goat is not at my command, but to the best of my knowledge they originated in the counties of Giles and Marshall in the State of Tennessee, and have never been seen out of that State nor have they been seen in any other part of the world, a point which should be of much interest to our profession. In appearance they are like any other goat, there being all the colors common to goats represented among them, and weighing from sixty to eighty pounds when full grown. You could not distinguish them from the common goat only by the peculiarities which I am now ready to state.

The chief and interesting characteristics of these goats above all consist in the fact that they fall to the ground with their entire body (legs, neck and lumbar muscles), becoming perfectly rigid or stiff, showing a typical picture of an animal suffering from strychnine poisoning. These "fainting" spells last for about ten or fifteen seconds, after which time the animal arises and walks off, showing slight stiffness in the posterior limbs, for a distance of fifty or sixty feet, after which time he walks and acts just like any other goat. These "fainting" spells can be produced or brought on by any sudden excitement which will startle them in the least, or in case the goat attempts to jump a bar or rail not higher than twelve inches, from the ground, or

say he attempts to jump a two feet ditch or stream, he at once falls to the ground in a "faint." This strange pnenomenon is seen in all the off-spring without exception, being often noticed in kids, but as a rule not well marked until one year of age. This is an exceedingly interesting point to veterinarians, for it shows that it is not pathological in origin, but an hereditary con-

dition. There are about 100 head of these goats in existence, all of which tread Tennessee soil. These goats are unfortunately deprived of the much-enjoyed sport of jumping fences and walking barn roofs, so much enjoyed by other goats, for they will remain in an enclosure with any kind of an old fence. As George C. Brown, of Spring Hill, Tennessee, says, this may sound "fishy," but you must see these goats in order to appreciate them.

AT a recent meeting of the Missouri Valley Veterinary Association, held in Kansas City, $20 of the Association's funds was voted to the Nocard Monument fund, and the Secretary requested to send check to Dr. A. Liautard, of Paris, to be turned over to the committee.

A PRELIMINARY REPORT OF THE TREATMENT OF CHRONIC LAMINITIS IN ITS EARLY STAGES.

By W. P. Hill, Vet. 12th U. S. Cavalry, Batangas, P. I.

In the treatment of the subsequent stiffness following acute laminitis I have for eight years been using blisters round the coronet, bar or rocker shoes, exercise, etc., but have very seldom seen any good results; in fact, generally very discouraging. After treating a patient through the acute course of the disease, he comes out walking on his heels and with hunched-up body, how helpless we feel, having done everything we can and with nothing further to do but to repeat the blister, which does no good at this time. No particular signs in the alteration of the foot's shape have taken place, and if anything is to be done it must be now or never. Thoroughly tired of my poor success with the old routine treatment, I determined to try what effect hypodermic injections of spirits terebinthinæ over the coronet would have. When I arrived here with my regiment the horses turned over to E Troop had three that had been suffering with laminitis for ten days; they had been in hot soak tubs and given nitrate of potassium and aconite, and exercised daily; the lameness was still excessive; they laid down most of the time, and were covered with bed sores. I had the feet well washed with soap and hot water, then washed off with a strong solution of creolin, sterilized the syringe and needle and drew up one-half a drachm of spirits terebinthinæ. Then strapping up the foot to be injected, I put the needle under the skin about an inch above the coronary band, attached the syringe, and injected the medicine. This I did to the front feet of the other two; had them tied up short to the picket line. I chose this place to keep them from bruising their ankles when pawing. They were very restless for three or four hours, but after this time all uneasiness had passed off. The next day there was considerable swelling round the coronets, a slight rise in temperature and soreness on pressure; this passed off on the third day; from this time I noticed a change for the better, they stood up most of

the time and in a natural position. One of the horses a few days later developed an abscess at the point of injection, which I opened and syringed out, healing taking place in a short while. Three weeks after the day of injection these horses were sent to Manila, a distance of 90 miles, the man who took them down assuring me they went well all the way and showed no stiffness. Before they started I had them trotted up and down and I was surprised at their recovery. I don't mean to infer they were as sound as ever, but a wonderful improvement was manifest, with good prospects of entire recovery. These horses I intend to see when I go down to Manila, and will write further as to their final condition.

These results so encouraged me that I have used it once again. This horse had a severe laminitis. I used the routine treatment in the acute stages, but he was left with the same characteristic walk after the tenth day, when I used the hypodermic ; in five days he was greatly improved ; altogether he was on sick report one month. He is now ready for duty, and is going as sound as ever ; of course he might have come out as well with blistering, but, judging from my previous experiences, I have very strong doubts, and cannot help crediting it to the injection.

This is all preliminary, but so far the results seem very promising, and I intend to follow it up with all future cases. Any improvement on the blister, I think, is an advance in the right direction. I don't know if this has been tried before ; if so, I would like to hear from others regarding their success.

COURAGE OF A HORSE.—Horses painfully contend on the race track for victory out of their own native courage and ambition—not under punishment, for, as a rule, the courageous horse will "stop" or "shut up," as the technical phrase is, when whipped or spurred at the finish of a race. In California some years ago a running horse broke one of the bones in a foreleg near the close of a heat, perhaps seventy yards from the wire. He faltered for a moment and then, recovering himself by a mighty effort, struggled on and won the heat practically on three legs.—(*Country Life in America.*)

STUDIES UPON LEUCOCYTOSIS.*

NOTE BY DRS. H. STASSANO AND F. BILLON.

The product mentioned in the preceding article (See REVIEW for November, 1903) as having been used by us in the experiment described to induce an increase in the number of leucocytes was one which has been introduced into veterinary therapeutics by Doctors Pichard and Cotty. It is obtained by the action of ozone upon a terpene-bearing volatile oil, the action being arrested at a point when the latter has absorbed a quantity corresponding to four volumes of ozone. This product was kindly furnished us by Messrs, Brigonnet Pére & Fils & Gaubert, who manufacture it for commercial use at La Plaine St. Denis, under the name of "Tallianine."

The product is entirely harmless. We have injected it intravenously in massive doses without noticing the least subsequent disturbance. *Its most marked characteristic, physiologically—the one which in all probability will account, at least in part, for its curative properties—is to rapidly increase the number of leucocytes in the circulating blood.* In the rabbit, it causes in a short time an intense, but fleeting leucocytosis. The following observation copied from our records seems to us to be a very typical example of this form of leucocytosis in small animals.

January 18th, 1902.—Rabbit, weighing two kilogrammes, given 2 cubic centimetres of "Tallianine" in the vein of the ear.

Time of Examination.	Number of Leucocytes in the Cubic Millimetre of Blood.
Before the injection	13,500
20 minutes after	9,750
40 " "	45,750
1 hour after	37,500
1 hour and 20 minutes after.	38,750
2 hours and 20 minutes after	20,000
2 " " 40 " "	12,250
3 " after.	11,250

* NOTE.—This is the second part of an article prepared by Drs. Stassano and Billon entitled "The Fibrin-Ferment content of the Blood is Proportional to its Richness in Leucocytes," and originally appeared in our issue of November, 1903. As several of the tables were misplaced by the printers and the article thus became confusing and misleading, it is reprinted correctly in this issue.

In large animals the product induces the leucocytic action more slowly. The following observation is an example:

March 31st, 1902.—Ten cubic centimetres of "Tallianine" were injected into the jugular of an old horse.

Time of Examination.	Number of Leucocytes per Cubic Millimetre.
Before injection	5,250
15 minutes after	6,500
45 " "	7,250
1 hour and 40 minutes after	8,000
2 hours " 10 " "	9,500
5 " " 30 " "	5,000

The following observation, the subject of experiment in this case being a heifer, is a much better demonstration of the degree of leucocytosis induced in large animals by the product with which this communication is concerned, viz., "Tallianine."

November 16th, 1902.—The animal, weighing over 600 pounds, received by the jugular vein 300 cubic centimetres of "Tallianine," the injection being made in eight minutes.

Time of Examination.	Number of Leucocytes per Cubic Millimetre.
Before the injection	12,750
5 minutes after	9,000
30 " "	12,250
1 hour after	14,500
1 hour and 30 minutes after	14,000
2 hours after	20,250
2 hours and 30 minutes after	18,750
3 " " 30 " "	17,500
4 " " 30 " "	18,500
5 " " 30 " "	21,750
6 " " 30 " "	19,250
7 " " 30 " "	19,000
10 " after	24,500
11 " "	25,000
12 " "	23,000
13 " "	18,750
30 " "	14,250
52 " "	12,500

There exists a certain ratio between the amount of the product injected and the degree of the hyperleucocytosis induced.

The proof thereof will be seen if one compares the results of the preceding observation with those of the following double observation. We possess, besides, in our books of records, other observations which prove the existence of this ratio as a fact.

December 17th, 1902.—Two cows, one, weighing about 1200 pounds, received by intravenous injections 50 cubic centimetres of "Tallianine"; the other, weighing about 1150 pounds, received 20 cubic centimetres "Tallianine."

Time of Examination	Number of Leucocytes per Cubic Millimetre.	
	1st Cow 50 c. cs. "Tallianine."	2d Cow 20 c. cs. "Tallianine."
Before the injection, and a bleeding of 200 cubic centimetres in each cow	8,750	4,250
Five minutes after the bleeding.	12,500	6,750
Injections of "Tallianine" given:		
2 hours after the injection . . .	10,000	5,000
4 " " " " . . .	12,250	5,500
6 " " " " . . .	13,500	5,500
7 " " " " . . .	21,500	9,250
9 " " " " . . .	8,250	6,750

The hyperleucocytosis, of which the above are a few examples, concerns, both in small and large animals, the polynuclears. In the majority of cases the increase reaches as high as the third of the normal ratio between these leucocytes (the polynuclears) and the mononuclears.

WONDERFUL HORSES AND HORSEMANSHIP.—Daring German horsemen have outdone the bicyclists at their own game. In several parts of the Fatherland men and horses have been giving exhibitions of skilful riding and running on a small saucer cycle track, similar to the "whirl" used by vaudeville performers in this country. The tracks are built specially to withstand the great weight of the galloping animal that spins round and round until the spectators become dizzy. Several horses have been broken to the feat and seem to take great delight in going at top speed around the steep bank. The riders invariably ride standing.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

VERMINOUS BRONCHO-PNEUMONIA IN THE ASS.

By S. STEWART, M. D., D. V. M., Kansas City, Mo.

During the latter part of February, Mr. Philip Walker, of South Moline, Kansas, who raises a large number of jacks, and who also buys and sells over a wide area of country, observed that some of his animals were sick, the principal symptoms of

Fig. I. Adults about natural size.
a—Male. b—Female.

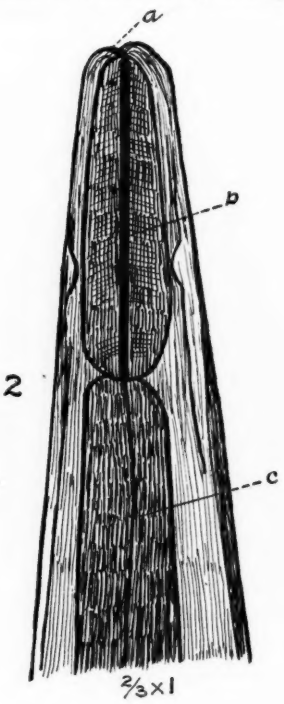


Fig. II. Head parts of adult.
a—Mouth.
b—Oesophagus.
c—Intestines.

Fig. III. Caudal extremity of female
a—Anus.

which were cough, nasal discharge, rapid emaciation and death. He sought the advice of veterinarians, and the disease remained a mystery until about the 1st of April, at which time some

seven were dead. About March 16th, Dr. D. E. Sawyer, of Howard, Kansas, was called in to investigate the difficulty, and

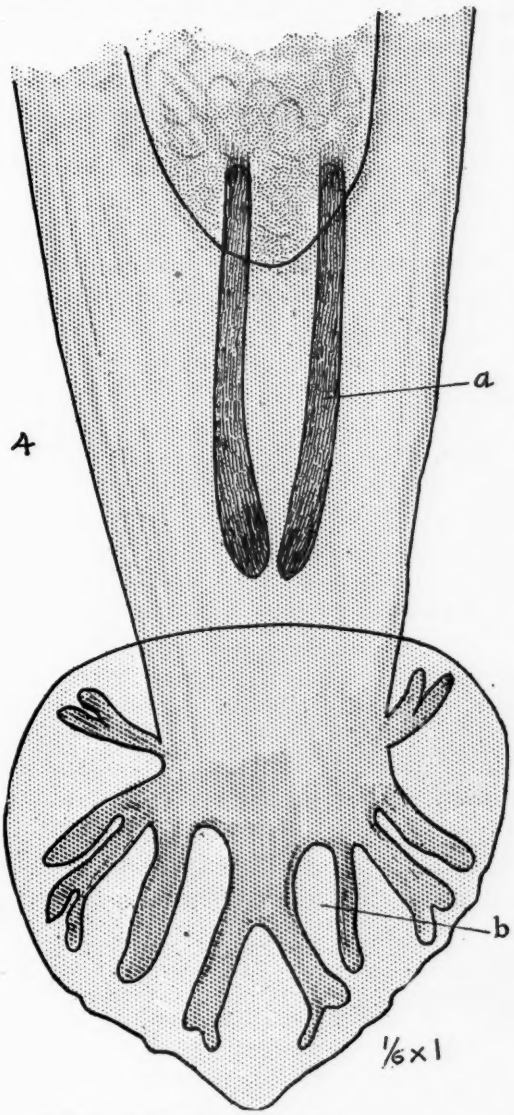


Fig. IV. Caudal extremity, male.
a—Spiculæ.
b—Caudal pouch, showing special arrangement of ribs.

at first thought them to be simple cases of broncho-pneumonia. The disease continued to spread, however, and Dr. F. F. Brown, of Kansas City, was called in consultation. It was found that

Mr. Walker had on the one ranch 75 head of jacks and jinnies, which were divided into three groups, a part of which were stabled all the time, a second group were stabled nights, and the third group not stabled at all. The disease appeared in all three groups. As each group secured its water supply from a different source, it was evident that the disease was not spread through the water. The provender came from a common source for the three groups. During this investigation it was not determined from what source the infection reached this herd. The disease developed in animals of all ages, but it was more violent and fatal in those under a year old. In the beginning the disease was observed as a dry suppressed cough with some loss of appetite and lack of vigor, which condition rapidly increased. With the cough there was soon present a mucopurulent expectorate, the animals grew rapidly worse, and those which succumbed, died in 7 or 8 days. Some of the stronger and older animals seemed to be able to withstand the attack, and under treatment recovered. The loss was 13 animals in all, including one jack 7 or 8 years old, one 4 year old, and two yearlings, the remainder were sucklings of both sexes. After the disease was recognized and treatment instituted, only two of the considerable number which were sick, succumbed to the disease. The sick animals which had survived to the time of the investigation, were medicated by inhalation of oil of turpentine and oil of eucalyptus, 1 drachm each twice daily, and internal administration of powdered digitalis, powdered nux vomica, and powdered chloride of ammonium, doses suitable to the age of the animal.

Fig. V.—Segmentation of eggs.

Post-mortem examination revealed catarrhal bronchitis with small pneumonic centres throughout the lungs, and the presence of adult strongyli in the mucus which occupied the larger bronchi. No distinctive post-mortem changes to be found in other organs of the body. The worms were submitted for special study to Prof. B. F. Kaupp, Kansas City, who unhesitatingly classified them as *Strongylus Arnfeldi.* The professor made a number of drawings, which are herewith reproduced, showing the essential evidences for making diagnosis of the worms.

Numerous cases of verminous bronchitis are found throughout this section of the country in cattle, swine, and sheep, but this is the first out-break of this disease in solipeds which has been brought to our notice. If any of the readers of this article should know of other out-breaks they would do us a favor by writing a description of the same and sending it for publication.

For full description of the *Strongylus Arnfeldi* see Neumann's "Parasites and Parasitic Diseases of Domestic Animals," pages 582 and 595.

PUNCTURING PER RECTUM.

By Z. W. SEIBERT, V. S., Cresline, Ohio.

This may be new to some of the profession, and possibly old to others, but, as these two cases are very interesting to me, I will give it to our worthy REVIEW for publication and the benefit of those whom it may concern.

Case No. 1.—I was called to see a black horse, 1000 lbs., Nov. 10. Found my patient suffering intensely with pain and on inquiry found that he had been in the same condition for some hours, and had been treated with all manner of stuff too numerous to mention. The horse on my arrival was pawing, lying down and sitting up repeatedly; turning up lips quite often. Circulation good and full; temperature 101° F., respirations somewhat hurried; eyes staring. When down and lying quiet for a minute he would extend his head and neck as far as he could. I gave my ordinary colic remedy, but with no relief. Repeated in one hour and no relief. I could hear no vermicular motion of the bowels at all. Abdomen seemed full, as if full of gas; punctured and found no gas, but in two hours the rectum seemed to bulge out. Here is where I made my examination per rectum, and to my surprise I thought I could discover gas. I never did this for gas, but was worn out, being up all night the night before. I concluded to try what I could to relieve the horse, so that I could go home, I washed my arm and used a small trocar that usually is with a hypodermic syringe. I tied a string to the needle and went into the rectum as far as my arm would allow, where I found what I thought was gas. I worked the trocar slowly till I thought I had it where I wanted it; pulling on the string I pulled the needle out of the canula, leaving same in and holding canula with thumb and finger, and to my surprise I found an enormous amount of gas. The horse became quiet. I left some tonics and told the owner I would be back next morning.

Next morning when I returned the owner said he had been quiet all night, but when I was there he seemed to have a very little pain every half hour, but bowels did not move, no peristaltic movement that I could detect. Gave aloes, ℥ vii; calomel, ℥ ss; fl. ex. nux, ℥ i; made into pill. But pill did not work in twenty-four hours and was called again. Next morning, Nov. 12, I found horse very dull and had eaten nothing. I gave him one grain of strychnine hypodermically and kept strychnine, gr. ss, up every six hours. After the fourth dose of strychnine the horse began to eat and drink, bowels began to move, and he made a good recovery.

Case No. 2.—On Dec. 2, 1903, a black mare, 14 years old, took sick while in town and was brought to my barn for treatment. She could hardly stand till we got the harness off. Circulation full and strong. Temperature 102° F.; would paw, lay down and roll, look around at side; no peristalsis, some eructation of gas, flanks seemed full, eyes staring. Gave her ammonii carb., ℥ ii; tr. asafœtida, ℥ ii; spirits nitre, q.s. ℥ i. Given in capsule. No relief, and repeated in one-half hour and no relief. Then I gave soda bicarb., ℥ iii; aqua, Oi, with no relief. Gave turpentine, ℥ ii, in capsule. No relief. I knew I had gas to contend with and tapped her, but got no gas. So I made examination per rectum and discovered gas. I used small trocar as in Case No. 1, and I found an enormous amount of gas. The puncture gave *instant* relief.

Brothers in the profession: When you get a case where you can give no relief and think you have gas, don't forget the rectal examination, and in many cases you will be rewarded for your trouble.

I would like to say right here that I found one of those so-called cases of colic, that when I made a rectal examination, I found a rectal abscess, from which I drew five quarts of pus, and washed it out every day and dressed with H_2O_2, and the horse made a good and speedy recovery. Do not neglect the rectum because it is a little trouble to you; examine it in these doubtful cases and you may be rewarded well for your trouble, for you know the rectum is the seat of a great many troubles.

FUNGOSIS TOXICUM PARALYTICUS.*

By S. H. Swain, Decatur, Ill.

It will be remembered that at our meeting in January, 1903,

* Presented to the Meeting of the Illinois Vet. Med. and Surg. Assn., Aug. 18, 1903.

my son, Dr. W. A. Swain, of Mt. Pulaski, Ill., reported a case of food poisoning in a German coach stallion, which was successfully treated by him and myself by the intravenous injection of stronger water of ammonia (aqua ammoniæ fortius). The result of this treatment was so marked and satisfactory, and being new in the treatment of this fatal disease, that I felt a desire to give the intravenous injection of aqua ammoniæ fortior a further trial in the treatment of this rapidly fatal and, to me, very unsatisfactory disease to treat.

My desire was gratified on January 17th, 1903, as on this date I received a call by Mr. L. W. Benson, of Harristown, Ill., requesting my services to a supposed case of azoturia, but on arriving at the farm at 2.30 P. M., I found the case to be instead of azoturia what seemed to be a hopeless case of food poisoning. The animal, a large road horse, had been running in a cornstalk field for some three weeks prior to the attack, and on my arrival was found in a recumbent position, and on being assisted to his feet was unable to stand even when supported. At this time (about 3 P. M.), respiration eight, circulation almost imperceptible, temperature 98½; at 3.30 P. M., temperature was again taken and was now down to $97\frac{6}{10}$. At this time I administered a physic, followed by intravenous injection into the median subcutaneous vein of four drachms of aqua ammoniæ, diluted with an equal quantity of distilled water, and immediately following the administration of the above ½ grain of strychnia sulphate and 30 minims of fluid extract of digitalis were administered by hypodermic injection. The response to this treatment was remarkably satisfactory. Within a very short time the respiration became more frequent, the circulation was increased in force and rapidity. At 4 P. M., within thirty minutes after the administration of the ammoniæ, thethe rmometer registered his temperature at $98\frac{4}{10}$. The patient was yet in the recumbent position, but showing rapid improvement. At 5 P. M. his temperature was again taken and found to be 100. A repeat dose of 2 drachms of the ammonia was again administered as before and also a repeat dose of ½ grain of strychniæ sulphate with 2 grains of convallaria. Shortly after the administration of this dose at 5 P. M., to the great surprise of all present, the patient rose to his feet at a first effort and without assistance and remained standing. At 6.30 P. M. the patient was on his feet, but somewhat restless; respiration quite rapid, circulation stronger and more frequent; temperature was now found to be $101\frac{7}{10}$. The condition of the patient was so satis-

factory at this time that treatment for the night was now discontinued. The patient was watched until 9 P. M., and at this time was resting quietly on his feet, and was then left for the night in care of his owner.

A second visit was made the following day, January 18th. I reached the patient at 11.25 A. M., and found him still on his feet, and he seemed to be doing fairly well. I learned from the owner that he had rested quietly on his feet during the night, and had turned around in the stall several times during my absence. Respiration was now 10, circulation about 40, temperature $102\frac{3}{10}$. A repeat dose of ½ grain of strychniæ, 2 grains of convallaria, with 20 minims of digitalis, was administered by hypodermic injection. The patient was yet showing some lack of coördination in the posterior extremities. The owner was now advised of the importance of careful treatment, and that this partial paralysis was liable to become permanent, but he seemed over-confident of the complete recovery of the patient, and declined to incur the expense necessary for further personal attention by me. I then left the following preparation: Tr. nux vomica, 2 ounces; tr. gentian, 2 ounces; hydrochloric acid dilute, 1 ounce; water, q.s. fiat eight ounces, mixed and given one ounce morning and evening in food, or water drench. When this had been administered and a report made to me of his condition, the following was prescribed: Nux vomica tincture, 4 ounces; gentian tincture, 4 ounces; iodide of potassium, 4 ounces. Mix. Aqua, q.s. fiat sixteen ounces. To be given morning and evening, one ounce at a dose, in food or water drench.

I might suggest here that when administering ammoniæ as above, the seat of puncture should be thoroughly washed shortly after each injection with vinegar, in order to prevent the irritation resulting from the ammoniæ.

I must say that it is a source of much regret to me that I was not permitted to give this case the necessary personal attention for his complete recovery, but such is the fate of the veterinarian, and would say I have never seen the patient since my visit on January 18th, but have learned through his owner that his action in his posterior extremities is somewhat deficient, but is so far recovered as to be able to do good service on the farm.

I hope this treatment will be given a thorough trial by members of this Society, and that their success or failure may be reported to us.

COMPLETE RUPTURE OF ABDOMINAL MUSCLES.*

By JAMES HARRISON, V. S., Maple Rapids, Mich.

On August 23d last a Mr. Wellington Irwin came to my office and informed me that he had a mare heavy in foal and past due, and that she had broken down, and wanted me to go to his farm and see if I could do anything for her. I had seen several years ago a similar case, and advised him that I thought the case was hopeless, and the best thing he could do was to go home and put the mare *hors-de-combat.* But he was anxious for me to go and see the mare, and was willing to pay the price; so I went to his farm. The mare was out in the pasture-field on the flats. We found her grazing, and on examination found her pulse normal, respirations normal, and temperature 101° F. Muscles of the abdomen ruptured completely, allowing the abdomen to sag a great deal; drawing the mammary glands down very much; after examination he asked me what I thought of the case. I told him I thought the best way out of the difficulty was to shoot her at once. While we were talking a cattle drover came along and expressed the opinion that I was giving him good advice. But the mare was not suffering any, and he seemed to think that if we could get the colt away she might possibly raise the colt and perhaps do some work afterwards, stating that he had seen one in a similar condition, and that she had done considerable work on the farm. Then, to satisfy him, I took the colt from her, at the same time telling him that I did not think it would live or that the mare would ever live to raise it. The colt was strong and healthy and fully developed, and after a short time got on its feet and nursed. I was very busy at the time and did not go to see them any more. I think it was three or four days afterwards the owner came to town and told me the colt had died after two days, but the mare was still picking around the field. It was about a week afterwards, he told me he found the mare dead in the field one morning.

This is the second case of this kind I have seen. The first one was an aged gray mare due to foal, but in which the rupture seemed much more extensive, the belly dropping to a line much below the hocks and knees. She was taken out and destroyed.

I unfortunately did not have a chance to make a post-mortem of Mr. Irwin's case, but he informed me that he had opened her

* Presented at the meeting of the Michigan State Veterinary Medical Association at Lansing, Feb. 2, 1904.

and found that the muscles were torn (to express his own language) in a "jaggered way, saw-like shape," on one side of the centre or linea alba.

Now, the question is with me: What could I have done in a professional way, if anything?

OVER SEVENTY-FIVE VETERINARIANS were in attendance at the recent meeting of the Missouri Valley Veterinary Association, held in Kansas City, Feb. 15. Twenty-six new members were added to the list.

ON Feb. 23 Dr. William Herbert Lowe was reëlected to the office of City Veterinarian of Paterson, N. J., for a term of three years, and Dr. T. Earle Budd has been elected City Veterinarian of Orange, N. J. It is becoming the custom to appoint city veterinarians in many of the Eastern States.

NUMBER AND VALUE OF FARM ANIMALS.—The Acting Statistician of the Department of Agriculture has completed his estimate of the number and value of farm animals in the United States on January 1, 1904, by separate States. The totals for the country are shown in the following table:

Farm animals.	Number.	Average price perhead.	Value.
Horses	16,736,059	$67.93	$1,136,940,298
Mules	2,757,916	78.88	217,532,832
Milch cows	17,419,817	29.21	508,841,489
Other cattle	43,629,498	16.32	712,178,134
Sheep	51,630,144	2.59	133,530,099
Swine	47,009,367	6.15	289,224,627

CHRISTMAS GRADUATES OF THE ONTARIO VETERINARY COLLEGE.—At the examination held by the Board of Examiners on Dec. 22, the following received diplomas: Charles W Bandy, Litchfield, Ill.; C. F. William Bauer, St. Louis, Mo.; Anson W. Beach, Iroquois, Ont.; Henry N. Berthiaume, Woonsocket, R. I.; William J. Boddy, Walkerton, Ont.; Thomas E. Bowes, Castlederg, Ont.; George Bulgin, Elmira, Ont.; William S. King, Katonah, N. Y.; Jas. McDermid, Harriston, Ont.; William H. Mahoney, Rochester, N. Y.; James Henry Mann, Grand Valley, Ont.; P. Ernest Pallister, Ottawa, Ont.; Thomas A. Parker, Lynn, Mass.; Daniel J. Seifert, Linwood, Ont.; John E. Taylor, Toronto, Ont.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

TETANUS IN A DOG [*Grunau*].—Considering the rare occurrence of tetanus in dogs, the following case is of interest for publication: The tail of a nine-months-old English hunting dog was amputated by simply chopping off the end of the same; the hæmorrhage following the operation was controlled by a tight ligature, which was applied about 4 cm. from the end. As the dog showed poor health and impaired appetite for about eight days following the operation, the author was called to treat the animal. On examination he found the dog very fearful, highly irritable, and stiff behind. The ligature applied at the time of the operation was still there, and was found grown in, cutting through the skin and tissues. The ligated portion was gangrenous, and covered with fœtid scabs. The treatment consisted of a scientific amputation of the tail about 2 cm. above the ligature, and the application of antiseptic dressings. The animal was extremely excited during the operation, also the stiffness of the hind part was noticeable. On the following day, the dog could not bend the hind legs, and without assistance could not rise from the ground. Assisted up, the patient stood with the hind legs far extended and stretched back. The stump of the tail was held up to the right, but when the dog was petted by its owner, it was easily moved. The front extremities at this time were movable by the animal, while on close observation they appeared in a peculiar abnormal position. The appetite was fair, the act of mastication and deglutition was not interfered with; intestinal movements and defecation were normal. The patient barked continually when the owner or his wife left him. Chloral hydrate was administered internally, the patient received the best of care, and was carefully guarded from excitements. On the third day the symptoms were more pronounced, the patient laying flat on his left side, fore and hind extremities in a continual tetanic spasm; convulsions of the whole body. The tail was voluntarily immovable, the head was spasmodically extended backwards, the spine had a downward curve (opisthotonos). The membrana nictitans appeared extended over the eyes. The ears were somewhat elevated, and pointed backwards. The expression of the animal betrayed great anxiety;

consciousness was normal. At this time deglutition was interfered with; the patient foamed continually from the mouth. The appearance of trismus was noticeable. The animal was destroyed according to the desire of the owner.—(*Berl. Thierarzt. Wochenschr.*)

INTERNAL TREATMENT OF LAMENESS WITH IODIDE OF POTASSIUM [*Schenkel*].—A horse, manifesting lameness on the near hind leg, was brought before the author, and diagnosed by him as a chronic inflammation of the hip-joint. Strong liniments were applied, until considerable irritation of the skin was noticeable, but without producing beneficial results. Considering that the affection of the joint might be of a specific nature, he resorted to a treatment with iodide of potassium. With daily administrations of 10.0 gm. of the drug, after five days a remarkable improvement was noticeable, which after five more days advanced so far that the lameness disappeared, and the horse was again useful for its regular work. A dog affected with the nervous form of distemper, recovered from the same, leaving only a lameness on the right fore leg. External applications of several remedies failed to produce noticeable improvement, until iodide of potassium was given in 1.0 gm. doses, which soon brought on a complete recovery.—(*Schweitzer Archiv. f. Thier.*)

INTRAVENOUS INJECTION OF ESERIN-ARECOLIN [*Barnick*].—A well-nourished work horse, eight years of age, suffering for eight hours with colic due to impaction, received from the owner a drench, containing 1.5 gm. chlorbarium, 30.0 gm. of aloes, in hot water, and to this was added enough warm water to fill a wine bottle. As this dose failed to act, the author was called and he proceeded to give an intravenous injection of 0.4 gm. of chlorbarium, but, due to a mistake, took the bottle containing eserin sulph., et arecolin hydrobromate, āā 0.05 gm., in 10.0 gm. of aquæ dest., and injected the same intravenously. The action of the same caused in 10 to 20 seconds staggering, profuse salivation, strong accelerated respiration, profuse perspiration, and falling to the ground. The pulse was rapid, almost imperceptible, the mucous membranes highly congested; intestinal peristalsis was present on both sides. About 2 to 3 minutes after the injection a profuse diarrhœa appeared, by which enormous quantities of the liquefied contents of the intestines were expelled. The author administered some strong coffee and brandy. Half an hour later the horse got up, appeared healthy and showed no after-effects whatsoever. The author

concludes from this case, that while the intravenous injection of eserin-arecolin is dangerous, it is not fatal; that this combination surpasses all remedies regarding quick action, and for these reasons recommends it for trial to establish its effectful minimal dose. It is also probable that the heroic action of these agents were increased in this case, by the remedies administered by the owner.—(*Zeitschr. f. Veterinärk.*)

RUPTURES OF THE RECTUM IN MARES [*Heichlinger*].—A very fiery stallion, always refusing to permit the directing of the penis, entered in two instances during the act of covering into the rectum. In one of the mares the rectum was completely perforated about 10 cm. in length. The animal was led home, a distance of about 1½ hours journey, and succumbed after seven hours, with manifestations of colic. In the other mare the intestinal wall was not completely perforated, but the muscularis separated from the mucosa in a 25 cm. long pocket. The animal was brought on the following day to the author, a distance of about nine miles. The treatment consisted of rectal injections. However, the condition growing worse, the animal was destroyed seventy-two hours after the injury. In the base of the pocket the peritoneum was found exposed and through this invading of intestinal contents was made possible.—(*Wochenschr. f. Thierheilk.*)

A REMARKABLE CASE OF ANTHRAX POISONING.—According to a notice in the *Allgemeine Fleischer Zeitung*, an inhabitant of the village of Roddenan died from anthrax. He fed his two dogs with the meat of a cow's carcass affected with anthrax. One dog having a sore on the mouth also died from the disease. It is supposed that the infection in the man was caused through a sore on his hand, which was frequently licked by this dog.

A DISEASE SIMILAR TO TEXAS FEVER ATTACKING CATTLE IN GERMAN EAST AFRICA [*A. Brauer*].—In East Africa a disease is found to be prevalent having a similarity to Texas fever. The clinical symptoms are constipation, diarrhœa, in which the fæces are mixed with some blood. Slight fever in the early stages, later reaching the height of 42.8° C. Pulse and respiration are accelerated. The appetite remains good up to the end. Hæmoglobinuræ does not appear. The duration of the disease varies from 4 to 14 days; the death rate reaches 50 per cent. In 1 to 75 per cent. of the red blood corpuscles, round parasites growing out to rods are noticeable, and which form later into round cysts. Brauer is of the opinion that the disease can be spread by cattle transportation.—(*Berl. Thierarztl. Wochenschr.*)

HÆMORRHAGE IN THE CEREBELLUM RESULTING FROM INFLAMMATION [*Prof. J. Marek*].—The affection appeared suddenly in a five-year-old dog with trembling convulsions, affecting the patient at intervals of 10 minutes. During the intervals the animal manifested dizziness and stepping sideways, moved in a circle. On the second day of the affection the dog was brought to the hospital in a complete insensible condition. Temperature was 38.9° C., pulse 130, respiration 30 per minute. Almost regularly at 15-minute intervals, attacks of convulsions of 4 to 5 minutes duration, affected the animal in such a manner that the dog, after getting up, moved to the left in a circle, finally falling; at such times twitchings of the muscles of mastication, also in the flexors and extensor muscles of the leg, were observed. Urged to walk, the patient moved to the left (manège walk) in a circle, gradually diminishing the diameter, until finally using the hind legs as a fixed point moved in the manner of the handle of a clock. A painful or tender spot on the head could not be located; the sensibility was all over diminished (due to the disturbance in the consciousness), both pupils were contracted to the minimum, not responding to light; the superficial reflexes were diminished, the tendinous reflexes were normal. On the second day of the affection a comatous condition appeared, the patient dying in a short while. The autopsy revealed a grayish red knot, of the size of a pea, in the white substance, in the anterior portion of the cerebellum, also numerous needle-prick-like hæmorrhages in the hemispheres of the cerebrum.—(*Veterinarius.*)

BEHRING'S IMMUNIZING MATERIAL.—The experimental success of von Behring's immunization against bovine tuberculosis is probably known to most veterinarians. As I have previously reported, a large number of young stock in Germany and Hungary received the immunizing inoculations, of which the results are yet unknown. Dr. Siebert's and Dr. Ziegenbein's institution, in Marburg, a. d. Lahn (Hessen), distributes the immunizing material for the following prices: 20 I. E. (immunizing units) 40 pf. (10c.), when ordered in larger quantities, 25 pf. (6c.). The immunizing material is distributed in small glass bottles, containing 10–20 I. E. The material is sold under conditions that the results of the inoculations will be reported, as desired in the accompanying instructions, to the institution. It would be very desirable if some of our colleagues would undertake this method of immunization, as I have no doubt that a number of dairy owners, etc., would only too will-

ingly agree to have their growing stock immunized against one of the most dreaded maladies. Conclusive results can only be obtained from very numerous inoculations.—(*A. E.*)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

URETHRAL CALCULUS [*F. A. Ashley*].—A three-year-old colt for two months has shown difficulty in making water. He stretches himself, makes some efforts, but expels only a few drops of urine. One day he is taken with colic and the author is called. In examining him per rectum, the bladder is found largely distended and the introduction of a catheter is stopped after passing in about three inches from the opening of the urethra. A knitting needle is introduced in its place, and soon strikes and scrapes against a hard body, which evidently is a calculus. It is night, and operation is impossible. Under the circumstances 6 grains of morphia are given, with directions that if the animal seems worse to send for him and he will puncture the bladder per rectum. The next morning the conditions are rather worse; an operation is imposed. The author hesitates which method to use, as he is alone and no one to help him. Finally, he injects 8 grains of morphia under the skin, administers a drench containing 2 ounces of chloral, and when, after waiting ten minutes, the horse is about staggering, he pushes him against the wall with the left hand, takes hold of the penis, pulls it out of the sheath, and with the bistoury in the right hand makes an incision in the length and through the urethra, extending from a point above the seat of the calculus down to the point of the urethra. A large stream of urine follows, but the calculus is not displaced. Incrusted in the mucous membrane, it has to be pulled away. There has been but little hæmorrhage. The penis is let loose, the region well disinfected, and the opening of the sheath closed with two stitches, which is removed after two days. Recovery is complete.—(*Vet. Record, Nov., 1903.*)

HÆMORRHOIDS IN A MARE [*F. A. Ashley*].—This mare was turned out with her colt, and was bleeding at the anus. She was lying down and exhibited colicky symptoms. The author made her get up, and then observed bulging out of the anus a mass of a blackish red color and as big as the two fists of a man. Of firm consistency, the tumor was constituted of

clotted blood. The mare was placed in her stall, on an inclined floor by thick bedding of manure under her hind limbs, and fomentations of warm water prescribed. After an hour of this treatment, a puncture was made with a fine trocar without any result. Then soft embrocations of vaseline were applied, and little by little with gentle pressure the growth was pushed back in the rectum. The animal was then given an injection of morphia to permit a rectal examination. This revealed the presence of two other tumors, half the size of the first. The rectum was full of an enormous quantity of very hard fæcal matter, more than a pailful. A purgative was ordered and also repeated oily and mucilaginous injections. During three days the mare had no natural passages, the tumor now and then making its appearance outside, under the strains of the animal. It was returned at each time and the rectum emptied. Little by little, however, under a laxative *regimé*, the intestine recuperated its normal functions, defecation took place naturally, and the rectal tumors disappeared, and never returned.—(*Vet. Record, Nov., 1903.*)

ACTINOMYCOSIS—IODIDE OF POTASSIUM [*Mr. Peale*].—At a meeting of one veterinary association, the author reported the history of a case of actinomycosis in a bull of Norfolk breed, which had been manifested for about three months. The disease had invaded the palate and the upper lip. The animal was of great value; he was unable to close his mouth. Four drachms of iodide were prescribed. After a few days there was a large swelling of the testicular region. After ten days of treatment the animal was saturated with iodide; he had a pitiful aspect; his eyes were crying; in fact, showed the symptoms of iodism well marked. The treatment was stopped; the animal gradually improved; took hold of his food, chewed well; finally recovered. But since the treatment he has lost all sexual desires and cannot mount a cow. This effect of iodine is already known in human medicine. Is this case the first observed in veterinary practice? as, says the editor of the *Record*, it would be interesting to know if similar conditions have been already observed and if this result is permanent or temporary. —(*Vet. Record, Nov. 21, 1903.*)

HERNIAS FOLLOWING CASTRATION OF A CRYPTORCHID [*Rich. Hudson, M. R. C. V. S.*].—A two-year-old colt, cryptorchid of the left side, is operated. The manipulations are very difficult on account of the presence of a large mass of the omentum. When two days after the operation the sutures are re-

moved, a small portion of the intestine was found adherent to the edges of the wound. Attempts at reduction were used on different occasions, and finally the tumor became as big as a foot ball, on the centre of which the uncicatrized skin allowed the detection of the intestine. It was decided to operate. With two ounces of chloral the animal was put to sleep and cast. The operation was very delicate on account of the adhesion of the intestine, but finally, with careful and minute dissection, two intestinal loops, measuring three feet each, were returned into the abdomen and the wound closed with a long clamp applied as high as possible and reinforced by metallic sutures of wire through the envelope. Recovery took place without complication and the horse was apparently perfectly cured for four months. After that time, the hernia made a second appearance. A second operation was performed, followed by the same results. The horse was turned out and after three months there remained nothing of the two severe operations he had been submitted to. Several days later, however, he was found dead in the field. At the post-mortem, the scrotum was found as big as a cocoanut and in its centre there was a small portion of the intestine, strangulated in the inguinal ring. The author remarks that in cases of cryptorchidy, where dangers of hernia are always to be feared, sutures and strapping ought not to be neglected. They never do harm, assist the asepsis of the parts and prevent the descent of the intestine.—(*Vet. Record, Nov. 28, 1903.*)

FRACTURE OF THE OS CALCIS [*E. Wallis Hoare*].—After jumping over banks a mare was found dead lame on the off hind leg. She had great pain, was uneasy, and in moving her hock was strongly flexed, the tendo-Achilles relaxed, the tuberosity of the os calcis displaced forwards. There was marked crepitation and a sharp portion of the posterior edge of the bone was slightly protruding through the perforated skin. The animal was destroyed. The fracture of the os calcis was found extending from the upper part of the posterior surface of the tuberosity downwards; on the external aspect, there was a triangular fracture, which separated a portion of the body containing the articular facet for the cuboid bone. A small portion of the articular cartilage was loose from one of the facets of the astragalus. In fact, the bone was broken in three pieces.—(*Vet. Record, Dec. 5, 1903.*)

A CASE OF ABSCESSES OF THE SPLEEN WITH GASTRIC ULCERATION AND GASTRO-SPLENIC FISTULA [*A. L. Williams*].—Eight-year-old horse is reported sick, off his feed, dull, yel-

lowish eyelids, temperature 105.2° F.; blood on microscopic examination shows great increase in leucocytes. Treated as bilious fever with salines, fibrifuges, biliary stimulants, salicylic acid. Later temperature rises to 106.2° F.; the patient is weak, staggers, has subacute abdominal pains, grunts, looks towards the side, exhibits breathing of pleuritic trouble, and yet no sign of pleurisy is detected on auscultation. Has times when he is easier, then diarrhœa sets in. The pulse becomes irregular, heart's action is intermittent, depraved appetite; the horse eats mud and chews dirty bedding. Later salivation of ropey mucus, which stops and returns. Finally after 13 days of sickness the horse dies comatous without a struggle. At the post-mortem the spleen is found weighing 22 pounds and forms a gangrenous mass, containing several large abscesses through its structure; the inside of these is filled with gangrenous fœtid matter. There is an ulceration of the stomach at the junction of the cuticular and villous coats; it has the appearance of an old lesion. There is a fistulous tract connecting the ulcer with a splenic abscess and there is a free passage from the stomach into the abscess. There is also general peritonitis.—(*Veterin. Journal, Dec., 1903.*)

TUBERCULOSIS IN AN AUSTRALIAN OPOSSUM [*Maj. J. Moore*].—Certainly, as the author says, "This is an interesting case." In 1895 two opossums were given to him; they were each six months old. After six weeks one was found one morning suffering with paralysis of both hind legs. As they were kept in a house made of wire netting, it was first supposed he had fallen in climbing against the walls and injured himself, but on examining closer one of the stifle joints was found much enlarged. A few days after the little beast died, and the post-mortem revealed that the lungs were one mass of tubercles. The other opossum remained apparently healthy for a year and ran away.—(*Veterinary Journal, Dec., 1903.*)—[Were these true or only psuedo-tubercles?—EDITOR.]

ROARING AND THORACIC CYST [*W. Hughes*].—Aged mare, which has been steady working for years, one day while in double harness stopped, became very excited, began to tremble, showing symptoms of suffocation, and roared. Taken to the stable, these gradually disappeared. After a few days she was taken out for a drive and after 50 or 60 yards exhibited the same symptoms. She fell down, her respirations were difficult, the heart quick and irregular, hard and bounding. After a while, she was herself again, and still nothing could be detected

to explain the trouble. A third time, when taken out, the same manifestations occurred and tracheotomy was suggested and decided upon. While the preparations were being made for it, she had a more severe attack, roared, roamed about, and died in six or eight minutes from asphyxia. At the post-mortem a large cyst was found at the base of the heart and large blood vessels, exerting pressure on the left laryngeal nerve, and causing the symptoms of suffocation. The cyst had very thin walls and contained about a pint or more of serous fluid. It must have been of recent origin, as the animal worked as usual up to twelve or fourteen days of her death. The laryngeal nerve was stretched round the posterior aorta and the cyst, which lay in front. It would have been interesting to know if tracheotomy would have been successful.—(*Veterinary Journal, Dec., 1903.*)

DRS. A. PLUMMER, R. H. Power, U. S. Cavalry, Fort Riley, and Drs. S. L. Hunter and O. M. Norton, U. S. Cavalry, Fort Leavenworth, Kansas, attended the meeting of the Missouri Valley Veterinary Association, held in Kansas City, Feb. 15.

THERE has been a committee appointed by the President of the Missouri Valley Veterinary Association, in accordance with a resolution passed at the recent meeting, to confer with and assist any committee of any State in the Missouri Valley in its effort to secure needed veterinary legislation.

DR. ROBERT DICKSON, of New York City and Seabright, N. J., has purchased a beautiful little farm near Seabright, with a large house and barns, and will convert it into a convalescent hospital and boarding farm. Rumor has it that the doctor is decorating his new house with great care for the reception of his bride, who is a most estimable lady of Seabright.

AT the recent meeting of the Missouri Valley Veterinary Association thirteen veterinarians handed in their names to Secretary Kaupp as subscribers for the REVIEW, he having volunteered without our knowledge to receive them ; and in Michigan Dr. H. F. Palmer, of Detroit, announced his willingness to receive subscriptions, the result of which was that eight new names were forwarded to us. These acts of practical kindness are greatly appreciated, and the gentlemen mentioned will have the satisfaction of feeling that they have performed a service which has a triple benefit—they have done a good service for the REVIEW, a greater one for those who will receive the journal, and incidentally the cause for which we are all laboring will be advanced.

ARMY VETERINARY DEPARTMENT.

This REVIEW department was opened in the March number, and its object was there explained—the betterment of the Army Veterinary Service, through affording a forum for the discussion of subjects in which army veterinarians are deeply interested, and which are at the same time of interest and value to veterinary readers generally. The profession, and particularly army veterinarians, are invited to contribute communications, original articles, items of news, etc.

A NEWSY LETTER FROM DR. C. H. JEWELL.

CAMP STOTSENBURG, PAMP., P. I., Jan. 3, 1904.

Editors American Veterinary Review:

DEAR SIRS:—Under separate cover I send you an article on "Contagious Ulcerative Lymphangitis" * as I have seen it. If you deem it of sufficient interest for publication, please insert it; if not, cast it into the waste basket. I believe the accompanying photographs of an advanced case may interest you as well as the readers of the REVIEW. I believe we need more literature on the Philippine diseases, since they are so very different from what we meet in the States.

The REVIEW is a welcome visitor, although it is a month late. I read with much interest the account of the American meeting at Ottawa, and regret not being able to attend.

Glanders and surra seem to be on the wane, especially in this province. There has not been a single case of either in this post during the past two months. Periodic ophthalmia is one of the diseases which causes a great amount of loss, since they sooner or later go blind. I cannot find any treatment which gives any but temporary relief. Thrush and canker we have all the time, and it is very much worse than what we have at home.

The question of obtaining legislation to advance our standing in the Army is one of vital importance to the veterinarians in the service. I believe that by sending our petition to the Secretary of War through military channels it might result in some good. If not, then we must depend upon the American Veterinary Medical Association to assist us.

The work of the veterinarian in the Philippines is making a favorable impression upon army officers in general. I believe

* Will be published in the April number.

proper recognition is bound to come, but not without some effort. Rank is the only thing which gives an officer proper recognition in the Army, but legislators do not know much about army life. One must associate with army people to know the peculiarities of the service.

Do not stop the REVIEW at the end of the year, but send it with the beginning of the new year, and I will remit at once. It takes some time for communications to pass between us, and during the time I do not want to be deprived of it a single issue.

In the Medical Department the doctors are supplied with all medical books and periodicals, while the veterinarian must supply his own.

The climate here is delightful, especially during the winter months. I am certainly agreeably surprised. I am,

Respectfully yours, CHAS. H. JEWELL.

A CANINE CEMETERY ON LONG ISLAND.—*Central Islip, L. I., February 12.*—The Idlewild Canine Cemetery Association is the name of a new corporation which has just taken title to a five acre tract north of the depot here, and which will be used exclusively as the final resting place for dogs whose owners have means sufficient to purchase a plot. Mrs. Myra St. Maur Stephens of West Hoboken, N. J., is at the head of the corporation. Mrs. Stephens is now arranging for the clearing of the land, and will, as soon as the weather permits, begin the work of dividing the five acres into burial plots. It is reported that Mrs. Stephens will have for her patrons many prominent dog fanciers in both New York and Brooklyn, who at present are forced to dispose of the remains of their pet canines in a manner shocking to their sensibilities. The cemetery is the only one of the kind on the Island, and the plots will doubtless be sold without difficulty. The plan is to have the ground laid out without regard to time and labor, in order that the cemetery will present a fine appearance. Little further could be learned of the plans of Mrs. Stephens and those who are associated with her in the movement to provide a suitable burial place for pet dogs, but it is surmised that the graves in the canine cemetery will be marked with handsome stones, on which will be inscribed the name, etc., of the dogs buried there. There are, on several of the larger country places on the south side of the Island, burial grounds for dogs and cats.—(*Brooklyn Eagle.*)

CORRESPONDENCE.

SIPHONING THE STOMACH IN ACUTE INDIGESTION BY WAY OF THE NASAL CHAMBER AND ŒSOPHAGUS.

ST. LOUIS, MO., Feb. 12, 1904.

Editors American Veterinary Review:

DEAR SIRS:—It has recently come to my notice that a demonstration of the operation of siphoning the stomach of the horse in cases of acute indigestion by passing a tube through the nasal cavity and œsophagus, was given at the late meeting of the Illinois State Veterinary Medical Association at Chicago.

I am very much interested in this operation, as it is not a new one to me, since I have employed it in my practice for the past ten years, with very gratifying results. Realizing the practical importance of the operation to the profession generally, I brought the subject up in the Post-Graduate Class of the Chicago Veterinary College (Dr. L. A. Merillat being present) in the latter part of January, 1903, and demonstrated the procedure before the members of the class; later I did the same for the senior class, and still later for the students collectively—three demonstrations in all at the Chicago Veterinary College. I also made two demonstrations at the McKillip College.

The success of the operation depends largely upon the kind of instrument used, and I hope to perfect one in a very short time that will insure success in every instance, with the object of establishing this method of instant relief in a very often fatal condition as a standard operation in veterinary surgery.

In a short time I will be pleased to write the REVIEW an article, going fully into the subject, and detailing the various steps of the operation. It is extremely simple, and any qualified practitioner can pursue it successfully from a simple description of the method to be pursued.

Very truly yours, J. M. PHILLIPS.

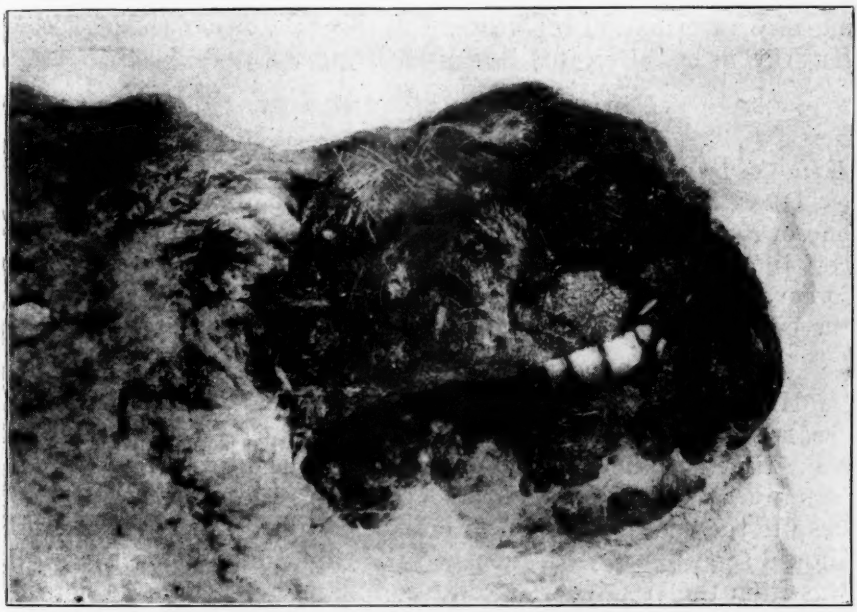
INFECTIOUS (?) ULCERATION OF LIPS OF LAMBS.

MANHATTAN, KANSAS, Feb. 3, 1904.

Editors American Veterinary Review:

DEAR SIRS:—About the 1st of December, 1903, I was called officially to examine a bunch of 10,000 New Mexican lambs that were being fattened for the market in North Central Kansas. The lambs were shipped in early in November and were

being fed alfalfa hay and ear corn, the latter scattered upon the ground. They were watered from a well pumped by an engine. About the middle of November a number of lambs were noticed to have sore lips, and in the course of ten days the disease had spread until about one-half the lambs, or 5000, were affected. The first symptom noticed was one or more blisters upon the lips; in some cases they occurred on the nose or face nearly to the eyes. The blisters soon burst, and a raw, angry granulating sore followed that was soon covered with dark brown or black scabs one-half inch thick.



The accompanying cut from a photograph of a severe case well illustrates this condition. In some cases the ulcers extended until they involved the inner surface of the lips.

The disease ran its course rapidly, and in ten weeks practically all made a complete recovery, without treatment. In a few cases the ulcers were so extensive that the lamb was unable to eat, and died from starvation.

A microscopical and bacteriological examination gave practically negative results. A green pus-producing organism was found in abundance, but inoculation tests upon a lamb were negative. The disease did not attack older sheep that were running with the lambs.

Sheep men of wide experience had never observed anything like it before. Some thought it might have been caused by cactus thorns, as cacti were plentiful in the region where these lambs were purchased, but there was no evidence of thorns in the tissues; older sheep were not affected, and there were no symptoms of the disease for at least three weeks after they were removed from the cacti country.

This disease is new to the writer. Dr. Kirschner, Federal Sheep Inspector for this region, had never observed it, nor have I been able to find any description of such a disease in the literature at my command. If any reader of the REVIEW can give me any information regarding this disease, either through the REVIEW or by letter, it will be greatly appreciated. N. S. MAYO.

PARTURITION IN THE SOW.

SALINA, KANSAS, February 18, 1904.

Editors American Veterinary Review:

DEAR SIRS:—Through the pages of the REVIEW, let some one or more veterinarians give some good pointers on their success in extracting pigs—what they consider the most practical forceps, and what success and details as to how they perform the operation of taking them through the abdominal wall.

HUGH S. MAXWELL.

HORSE KNEW LAND WAS NEAR.—When Thomas McGuiness, a well known horseman of Philadelphia, went to Europe some time ago, he took a blooded horse with him. The animal was in a specially prepared stall on deck and enjoyed the trip despite the rough weather. When Mr. McGuiness thought land should soon be sighted, he asked the captain how far the ship was from the Irish coast. The commander of the steamer, in his usual gruff manner, replied: "Your horse will tell you; watch him." The owner of the animal could not understand what the captain meant, and he was not particularly pleased with the answer. Finally, however, a couple of hours before land was observed, the horse, which was a magnificent bay, poked his head through the grating, and, stretching his neck, whinnied loudly. "There you are," said the captain to Mr. McGuiness, "your horse smells the land." The horse was like a different animal thereafter until the coast loomed up. The captain, in explaining the odd occurrence, said that the thoroughbred detected the odor from pasture lands that was wafted far seaward, and that horses on board ocean steamers always give the first signal when land is near.

SOCIETY MEETINGS.

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

The 16th annual meeting was called to order in I. O. O. F. Hall, Des Moines, Jan. 27, 1904, at 11 A. M., by President T. A. Shipley. The Secretary announced the card system of registration instead of roll-call. The Secretary read the minutes of the previous meeting as published in the *Journal of Comparative Medicine.* Moved by Dr. J. Miller that minutes be accepted as read. Seconded by Dr. Koto; adopted.

The President presented his address, as follows:—

PRESIDENT'S ADDRESS.

"*Fellow-Members and Friends:*—

"Agreeable to your wishes as expressed by ballot at the last annual meeting, it becomes my pleasant duty to welcome you to this our sixteenth annual meeting of the Iowa State Veterinary Medical Association.

"I again thank you for the honor you have thus conferred upon me. Custom or precedent more or less well established has also decreed that the President shall, at the opening of each of these annual meetings, deliver himself of the more weighty and wise or otherwise thoughts that have appealed to him most pertinently regarding veterinary matters in general and our own organization in particular, that have occurred during the interval between these meetings, or that should be considered at this time.

"The year just passed has been one of steady and irresistible progress in the veterinary world. The status of veterinary science in the domain of medicine has become more clearly and firmly established on the important plane to which it of a right belongs. There has always been a more or less popular impression that this branch of the profession lacks finish, lacks dignity, in short is not a science. That there has in the not far distant past existed reasons for this impression, cannot be successfully denied; but they have largely vanished and veterinary science is fast gaining the respect which it deserves. Its history is co-equal with that of medicine. The early writers of either human or veterinary medicine are equally amusing and erroneous as viewed in the light of modern research.

"The first organized attempt to teach veterinary science

dates back nearly a century and a half ago, when in 1761 was founded the veterinary college at Lyons, France, and has remained as a progressive and influential institution ever since. From that time on veterinary science has expanded in every way; schools and colleges have multiplied until the whole civilized earth is dotted with them. Every European country has them and every European country, with one or two exceptions, has one or more government schools or colleges, and some of them have been raised to the rank of universities. Now nearly every prominent medical school has its chair of comparative medicine, especially in the French and German universities. In the report of public instruction which Talleyrand read in 1790 before the French National Assembly, he advocated a veterinary training as a necessary preliminary and accompaniment to the study of medicine. In our own country, veterinary science has been slow in developing; nearly all of its schools are less than 20 years old; and while we have a population of about one-fourth that of all Europe, the number of veterinary students is only about one-tenth. The reasons for this are various. As our country becomes more thickly settled and more animals as well as more people must find subsistence on a given area, the animals become more valuable; and also on account of more artificial life, more and more subject to disease. Again, this country has never been burdened with the support of such immense standing armies with their large proportion of cavalry which has called early for an organized veterinary service, with official veterinarians in most countries with full army rank and pay. These considerations had their weight in attracting men of talent to the profession. The last of the older governments to accord her veterinarians deserved recognition has been England, whose veterinarians within the last year have succeeded in obtaining a royal warrant from His Majesty's government, the provisions of which are entirely satisfactory to the most fastidious veterinarian. This success of the English veterinarian in at last obtaining proper recognition from his government should put courage, vigor and determination into an unceasing effort, individually and collectively, of every veterinarian in this country to bring about a like recognition of our services for our government. That it will finally come, when the general public are rightly informed of its necessity, is not a question of debate; it is only one of how soon this condition of education can be brought about.

"Notwithstanding the slow growth of veterinary matters in

this country, the outlook was never brighter; there is a rapidly increasing list of appointments open to the educated veterinarian. Federal, State and municipal governments are everywhere awakening to a realization of their eminent fitness as sanitarians. Their work in staying the spread of animal epidemics has been of inestimable value to the stock-owner directly and to every one indirectly dependent upon him.

"But the work is only begun; there is much yet to be done in every department of the art and science of veterinary medicine. How can you and I do most to further its progress is the vital question of the hour. No great objects can be accomplished without organization. It is a pity to give up to party what was meant for mankind. But every man must work with other men. The 'I am holier than Thou' was a very bad motto for the Pharisee and it is a very bad motto for the professional man. A strong national organization is made possible by the support drawn from good live State organizations; and State organizations should foster and encourage, wherever possible, the county organization from which it might draw largely for its support. If we had a local corresponding secretary in each county to take up the matter of local organization under the direction of the State Secretary of our State society, what vast amounts of good might be accomplished by enabling the State Secretary to compile and edit various statistics and direct individual effort in channels of interest and profit to our Association. Indeed, I believe if we are to get the fullest benefit from our present State laws, or any other better laws that we may succeed in having passed, we must have some kind of an organization to prosecute offenders. If we could form some such organization as the Bankers' Mutual Protective Association, so that we could have the means necessary, and an alert official whose business it would be to get evidence and bring the matter with some force before the proper prosecuting officer, there would be a wholesome fear and respect for what little laws we had. There is little use of any law which is not or cannot be enforced. There might be, by this same agency, compiled a black list which would be State wide; and above all, this work locally would tend to break down little local, petty, professional jealousies, that we fear are altogether too common in this profession. There ought to be a larger spirit of tolerance toward our local brother practitioner. That he is entitled to his honest opinion, though that opinion may be different from ours, is evident, and, indeed, I see no good reason

why doctors have not the same right to honest difference of opinion as have lawyers or theologians; they certainly do not deal with less complicated or perplexing theories or conditions. But each of us should learn to apply the lines of the immortal Shakespeare, 'And do as adversaries in law, strive mightily but eat and drink as friends.' This kind of local harmony all over the State is a consummation devoutly to be wished for. Will you put forth your best endeavors to promote it? I sometimes think that if the veterinary profession had some of the opposition to overcome which harasses the medical practitioner in the way of such fallacious theories and popular vagaries as Christian Science, Spiritualism, Dowieism, and other allied doctrines that do not seem to apply to any alarming extent in veterinary practice, we should indeed all have to hang together or very certainly hang apart. The practical uselessness, however, of thus moralizing on occasions of this kind, is that we do not reach those that most need to profit by these suggestions, for they are not here, in fact they hardly ever attend veterinary meetings or subscribe to any veterinary journals; they certainly need missionary work. How are we to reach them? The power of a good example set them is an almost irresistible influence for good on those that are desirable; the rest we will probably have to do without.

"In the more practical every-day practitioners' world there are many things we note with pleasure; among which might be mentioned the prevailing tendency to a more rational and simple treatment for many diseases and conditions; for instance, who of you that have attended these meetings, both State and national, for ten or fifteen years back, do not remember the learned and lengthy discourses relating to the cause and treatment of the so-called paturient apoplexy in cows; almost every available drug on the lists of the most prominent drug houses has at some time or other had its advocates. But that was in the dark ages, so to speak; the light began to dawn some few years ago when the Schmidt treatment appeared on the horizon, and now this treatment has—as the mists have cleared away—been simplified, until air only seems to be the essential feature of a treatment more efficacious than any hitherto advanced. *Hot air* if you please, for the owner, but for the patient just ordinary clean air; the efficiency of the air is said to be enhanced by the use of a little clean water; the efficiency of the *hot air* is usually enhanced by the use of a little harmless coloring matter in the water. You will doubtlessly infer that the practic-

ing veterinarian must be an adept in handling men as well as animals. We believe that medical science in general is tending toward this simplicity and directness of treatment, for it seems that the most important and efficient factors in the problem of the suppression and eradication of the great white plague, tuberculosis, in man and animals, are uncontaminated air and uncontaminated food and sunshine. We hope that our Committee on Diseases and Treatment may at no distant future be able to start going something that will be equally successful in the treatment of azoturia, for it seems to be getting to be about as big a stumbling block as parturient paresis has been. It is certainly not to to be denied that hygienic measures are as equally important, but much harder to put into effective operation than therapeutic measures, because we have to deal with much deep-rooted prejudice and want of information concerning the necessity of cleanliness, fresh air and sunshine for both man and beast, and especially so where the diseases are intercommunicable. There is an increasing tendency in the practice of physicians toward the use of animal glands and extracts for the treatment of human ailments that have been hitherto little amenable to treatment; also in the favoring condition of the blood of many of the domestic animals, the antidotes for numerous pathogenic organisms and many poisons are produced or separated. There are in this way some almost priceless acquisitions for the treatment and prevention of disease in man. This field is a promising one for the veterinarian both as regards the supervision of its products and the opportunities it offers for original research.

"But why worry you further? Every view is an assuring one. True there is much yet to be done. Many questions that nature and science propound are in need of investigation and so numerous and far-reaching are the propositions that no one mind in one short lifetime can comprehend them all. Yet by constant study and investigation we are moving forward and upward toward the grand perfect consummation, which, though ever nearing, we may never reach; but it is encouraging to know that in pursuits like ours there are pleasant surprises and unusual delights, for as you press your way onward and upward your vision will be feasted with broader and more panoramic views until you at length stand upon the serene and towering heights of professional fame; but when you have reached this summit and look beyond, be assured you will see other mountains above you, and other beings upon their brows yet moving upward still in an endless progression; and as you strive to be in sympathy

with Truth you may hear them whisper 'Excelsior' to your ardent and aspiring spirit.

"It remains only for me to note the absence of the Secretary whom you unanimously elected at your last meeting. His resignation was accepted on account of his removal from our State. It is a well-conceded fact that the life and influence of any of these societies depends largely upon its Secretary. He should be a man of energy and unflagging zeal. Iowa has been favored with a succession of admirable secretaries, to which our society owes a debt of gratitude. Dr. Repp had no small task to fulfil expectations in following Dr. Brown. Both are with us no more; neither are lost to the profession; and we content ourselves with the thought that Iowa's loss is some other State's gain.

"In appointing Dr. Simpson to take up the work where Dr. Repp left off, I have followed the precedent established by a former President. I believe you will have no reason to censure me in my selection; and we should congratulate ourselves on having at hand one so fit and able to carry on this work with unabated vigor.

REPORT OF SECRETARY.

The Secretary read his report as follows:

"*Mr. President and Members of the Iowa State Veterinary Medical Association:*—

"Dr. J. J. Repp, your Secretary and Treasurer, leaving the State in August to go to Philadelphia to take up the study of human medicine, I was appointed by President Shipley Secretary and Treasurer *pro tem.* I did not realize before the appointment the amount of work the Secretary of this Association had to perform.

"In October I attended the meeting of the Iowa-Nebraska Veterinary Medical Association. A number of our members were present, and being solicited for a paper or a report of a case, a number promised to help the programme by one or the other. In November I sent a circular letter to all members of the Association reminding them of the coming meeting and asking for help on the programme. A number sent favorable replies. But still there were not enough, so I sent out a personal letter to a few who can almost always be relied on, and with their aid I was able to get up the programme which you all have. The committee on clinic of course attended to their part most satisfactorily.

"Right here I would like to suggest to some of the apparently backward members that they are just as capable of preparing something for the Association as any one, and the paper is interesting and instructive to all members, but much more so to them because the man who offers a subject always looks the matter up thoroughly, and they can lighten the worry and work of the Secretary a great deal.

"At the same time I sent out a circular letter to all registered graduates, holding up the advantage of membership, enclosing an application blank and asking them to join. A number sent in their applications and I understand there will be others presented to-day.

"I also wrote all suspended members whose addresses I found, notifying them of the action taken last year at Cedar Rapids regarding suspended members, and requested them to pay up and be reinstated. A few have taken advantage of the favorable terms and have asked for reinstatement.

"The last letter sent out January 16th was delayed on account of not being able to secure a hall until just before the letters were printed. My thanks are due to Dr. H. E. Talbot for looking up a hall for our use.

"I tried to secure reduced rates for the meeting from the Western Passenger Association, but at present there are not enough members of the Association to receive any favors of that kind, one hundred in attendance being necessary for favorable action.

"I have only found two copies of our Constitution and By-Laws. I would like to suggest that the old books of the Association be gone over by a committee appointed for the purpose to look for any changes of the by-laws, and that there be printed a couple of hundred copies of the by-laws for present and future distribution, and that the names of all members of the Association be included in this book; also blank pages for new names.

"From correspondence I learn that all veterinarians in the State are doing a good business. I believe all have reported this as the largest year's business they have ever had. Several have reported that they would be in attendance upon this meeting if business would slacken up enough to permit them to get away."

REPORT OF THE TREASURER.

The Treasurer read his report as follows:

SIXTEENTH ANNUAL MEETING, January 27–28, 1904.

FOR DR. J. J. REPP.

Receipts:

Cash on hand Jan. 12, 1903	$48.10	
Cash for Dues Jan. 12 to Aug. 24, 1903	53.00	
Cash for Membership Fees, Jan. 12 to Aug. 24	12.00	
Cash for Letter File Cabinet	3.50	
		$116.60

Disbursements:

Cash, J. W. Griffith, Clinic	$10.00	
Cash, Lawrence Printing Company	4.00	
Cash, Secretary Allowance	25.00	
Cash, Editing and Typewriting Proceedings of 15th Annual Meeting	20.00	
Cash, Ames Times	4.50	
Cash, Stamps	5.50	
Cash, Kistler	3.50	
Cash, Judish Bros	1.50	
Cash, Express, 2 pkgs., 1 Shipley and 1 Simpson	1.20	
Cash, Journal Comparative Medicine	1.20	
Cash, American Veterinary Review	1.25	$ 77.65
		$ 38.95

FOR HAL C. SIMPSON.

Receipts:

To Cash from Dr. Repp, Aug. 24, 1903	$38.95	
To Cash from Dues, Aug. 24 to Jan. 26, inclusive	8.00	
To Cash Membership Fees, Aug. 24 to Jan. 26, incl.	12.00	
		$ 58.95

Disbursements:

By Cash, Oliver Typewriter Company	$ 3.00	
By Cash, Denison Review	10.50	
By Cash, U. G. Johnston & Co	3.60	
By Cash, Denison Bulletin	4.50	
By Cash, Stamps	12.00	
By Cash, Badges	16.00	$ 49.60
Balance in Treasurer's Hands Jan. 26, 1904		$ 9.35

Respectfully submitted, HAL C. SIMPSON, *Treasurer.*

Moved that a committee be appointed to audit the Treasurer's report. The President appointed P. O. Koto, C. A. Clinton and J. W. Haxby. The Auditing Committee made the following report: "We, the Auditing Committee for the Sixteenth Annual Meeting of the Iowa State Veterinary Medical Association, hereby certify that we have examined the above account of the Treasurer and that we find it correct.

"(Signed) P. O. KOTO,
"C. A. CLINTON,
"J. W. HAXBY."

By vote of the Association the report was accepted and the committee discharged.

The Secretary brought up the question of application blanks not being properly filled out and signed by applicant. It was decided to accept same, as applicant's intentions were all right.

Adjourned for lunch at 12 M., to meet at 1.30 P. M.

AFTERNOON SESSION.

Meeting called to order at 1.30 by President Shipley.

The Board of Censors being absent, the President appointed W. R. Fullerton, F. H. P. Edwards and G. M. Walrod. The Secretary read communications from several members, the three following being of special importance: Dr. John R. Mohler relating to Nocard Monument, laid over until to-morrow; from W. B. Niles relative to Dr. T. A. Geddes' reinstatement and his being placed on the list of honorary members. It was moved that Dr. Geddes be reinstated and that he be placed on the list of honorary members as long as he is out of the State. Carried. From Dr. J. J. Repp:

PHILADELPHIA, 5249 ADDISON ST., Jan. 24, 1904.

Iowa State Veterinary Medical Association, in Session Des Moines, Iowa.

GENTLEMEN:—Although it is impracticable for me to meet with you in your annual convention, I shall be thinking of you and hoping that you will have a better meeting than ever before. Also, I shall recall the pleasure and profit I have had in attending the meetings of the Iowa Association in past years, and feel that I am missing a feast of good things in not being present this year. There will always be a warm place in my memory for the Iowa State Veterinary Medical Association. I have always had an intense concern for its welfare and have never knowingly let pass an opportunity to further its interests.

In my official work in Iowa I have constantly labored in behalf of the veterinary profession, and, although my zeal in this direction may have in a measure resulted in what may appear to some to be detrimental to me personally, I have no regrets, and hope the day may never come when I shall forsake the interests of the veterinary profession at the behest of those who would, if possible, destroy the business of the veterinarian. With best wishes, I remain,

Yours sincerely, JOHN J. REPP.

Moved, that Secretary write Dr. Repp expressing regrets about his leaving the State, and convey to him the best wishes of the Association. Carried.

The Committee on Sanitation reported as follows:

REPORT OF THE COMMITTEE ON SANITATION.

"This report has been left almost entirely in the hands of the Chairman, as there is so little of interest to bring before you at this time.

"In summing up the work along the lines of sanitary science in this State during the past year, I can only report little progress. The most vital questions have been dealt with in previous reports and the good suggestions and recommendations embodied therein have not been acted upon. The reasons for this are apparent. So diversified are the interests of our people that frequently what is for the welfare of some, is, at least, a financial detriment to others. Some of the problems with which we have to deal are of such a character that we can scarcely hope for unity of action in the adoption of better sanitary measures until the public see its dangers as we see them. A little reflection will help us to understand why it is the people are so slow in coming to our view point and so unwilling to accept measures which will benefit almost everyone concerned.

"We see the necessity of certain sanitary measures as a result of special study of disease and our frequent contact with the terrible pathological changes. The great mass of our people make no study of them, only occasionally see them and seldom, if ever, behold the changes that take place within the body.

"Another obstacle to the progress of our work, and especially is this true with reference to tuberculosis, is the long incubative stage, or the time elapsing between the reception of the specific agent into the system and the full development of the disease, thus making it difficult to trace with accuracy the source of infection. This, together with Koch's denial of the transmissibility of bovine tuberculosis to the human family, has led many people to believe that it is not necessary to have municipal milk and dairy inspectors. The few well authenticated cases of accidental infection is not sufficient to convince the skeptical public. As there are not willing subjects for experiment to be found we must look for further proof of undeniable accidental infection.

"That dairy cows have tuberculosis, we are certain, and that there are many cases of human tuberculosis, the origin of which cannot be accounted for in any other way except through a contaminated milk supply, seems to me sufficient evidence that this source of possible infection should be guarded against. Even grant it that the danger of infection is not so great as some of us believe, who wants to run any risk in the matter, or consume the milk or meat of any animal that is suffering from any disease? We pay for what we get and we have a right to demand that it come from a healthy animal and that it is pure and wholesome. Milk is an article of commerce and the public de-

mand that it shall contain a certain percentage of fat, and if there is any water or preservatives added the offender is promptly sought for and punished. But the same man can sell all the milk he wishes from as many old cows as he may have, no matter to what extent diseased, and nobody objects. The danger from watered milk and preservatives is not to be compared with those where the animal is suffering from constitutional diseases, and especially tuberculosis. Every year we are taxed for this inspection and we have a right to demand that it be thorough, that it begin with the animal, the fountain of our supply. Our dairy commissioners have done splendid service in securing such legislation as enables them and their co-laborers to punish all those found to adulterate the milk they put on the market, but his jurisdiction stops here and the supplementing and completion of this work and the necessary legislation will depend largely upon our unanimous efforts. While the good work done by previous committees and the other members of this Association has not born much fruit in this particular, yet the 'grafts made upon the old tree of knowledge have not been entirely barren.'

"Almost all of the dairies supplying milk to some of our towns and cities, some private and some furnishing milk for our State institutions, have been examined and submitted to the tuberculine test. The results of this work proved beyond doubt its necessity and wisdom, as 25 per cent. of some of the herds were found suffering from tuberculosis, besides the occasional presence of other diseases of a less dangerous character. Had the law required these dairymen to have every animal inspected before being admitted into their herds, a permanent good would have been accomplished.

"Could the majority of the people have had the experience that some of us have had in dealing with this disease, we would have no trouble in securing the adoption of the sanitary measures so long advocated by this Association.

"This State employs a number of men to inspect the kerosene we use in our lamps to prevent impurities which occasionally result in explosions, while these numerous fountains of disease, which are ten-fold more dangerous to the health and welfare of the public, are allowed to go uninspected.

"Glanders like tuberculosis is a communicable disease, and yet there is little trouble in enforcing the sanitary measures that have proven so effectual in controlling this disease. Had there been the same indifference and carelessness in dealing with

it as there has been with bovine tuberculosis, our States would have been overrun with the disease. Better methods are also followed in controlling and eradicating scabies than tuberculosis, though not a communicable disease, and in no way affects the welfare of our people, except financially.

"In this report I have tried to impress upon you the necessity of inspection of dairy cows, as the health of our people is more in peril from this source than possibly any other, and I hope there may be no indifference on the part of any member of this Association from this time forward.

"Respectfully submitted,

"J. MILLER,
"W. B. NILES,
"G. L. BUFFINGTON, } Committee."

The report was fully discussed by J. Miller, C. E. Stewart, P. O. Koto, W. H. Austen, P. Malcolm, C. W. Stevens, A. S. Brodies, S. H. Bauman, G. M. Walrod, J. W. Haxby, T. A. Shipley.

The Board of Censors reported favorably upon the following applications for membership: J. W. Bunker, Winterset; Thos. D. Hulme, Commerce; Carl Olson, Sac City; Rudolph Snyder, Dubuque; A. Kaderbek, Ft. Dodge; J. J. Richardson, Marcus; O. W. Rowe, Keokuk; M. Jacob, Ames; John V. Jewell, Le Mars; R. M. Allen, Marshalltown.

The report of the Board of Censors was received by vote. Moved that the rules be suspended and that the Secretary be instructed to cast the ballot of the Association for those whose names were read. This was done and they were declared duly elected.

The Board of Censors reported favorably upon the following for reinstatement to active membership: A. H. McKellar, Waterloo; Henry Shipley, Sheldon; W. B. Lincoln, Nashville, Tenn.; S. B. Nelson, Pullman, Wash.; and J. H. Spence, Clinton. The report of the Board of Censors was received by vote. On motion the rules were suspended and the Secretary instructed to cast the ballot of the Association for those whose names were read. This was done and they were declared duly reinstated.

REPORT OF COMMITTEE ON DISEASES AND TREATMENT, WITH SPECIAL REFERENCE TO AZOTURIA.

"Your Committee on Diseases and Treatment, instructed to make special reference to azoturia, begs to submit the following report:

"It is evident from a survey of the current literature for the past year that azoturia, its etiology and treatment, is still receiving considerable thought from veterinary practitioners. We are unable to report the results of any research which has thrown new light on the subject. Instead much of the evidence presented during the past year has been of a contradictory nature. This report will, of necessity, be confined to a consideration of the disease as it is regarded to-day, and a brief discussion of the most recent methods of treatment. The theories regarding the nature of this disease are extremely varied. It may be well to review them briefly here:

"In England it is regarded by one as hysteria; while Williams regards it as uræmic poisoning. In France and Southern England it is believed to be a spinal myelitis. In Germany Dieckerhoff defines it as an acute general disease of horses manifested by severe parenchymatous inflammation of the skeletal muscles, with a bloody infiltration of the marrow of the bone, especially of the femur, with acute nephritis and hæmoglobinuria, due to exposure to the cold. Friedberger and Fröhner believe it to be rheumatic in most cases, associated with an excess of lactic acid, and usually due to exposure to cold, which exposure creates extreme sensitiveness of the cutaneous nerves. By other Germans it is termed myelo-renal congestion and rheumatic lumbago. The theory of a stable miasm has been advanced by some writers. Law believes that the causative factor must be sought in some source from which it may be supplied promptly under stimulus of severe exertion. He is inclined to regard the portal system as such a source. Since the normal liver is so extremely vascular, the torpid, congested liver of the plethoric horse, after a short period of idleness, must contain an excessive amount of the surplus products of assimilation. The spleen, which has been termed the safety valve of the portal veins, is in a like condition. This leaves the portal veins and capillaries overcharged with blood rich in protein. Active exertion calling forth accelerated breathing and circulation causes this entire mass of blood to be thrown in the general circulation. This induces a plethoric condition with an excess of both globules and albuminoids. The presence of the hæmoglobinuria is explained by the presence of various solvents of the hæmoglobin, which may be derived from fodders.

"The latest research of Ligniéres would indicate the disease to be bacterial in its origin. He has found the subarachnoid fluid at the level of the bulb to contain streptococci. Cultures

from this source possessed the usual cultural characters of streptococci, and two or three drops inoculated intra-peritoneally produced a highly acute parenchymatous nephritis with bloody urine. There was additional loss of control of the hind limbs and extreme nervous irritability. Intravenous injections of 300 c.c. of culture in a large stallion produced hyperthermia, 102° the second day, 104° the third day, 105° the fourth day, paraphlegic the sixth, and death the seventh. A second horse was inoculated with 150 c.c., showed illness for several days but no paraphlegia, then apparently recovered, but became paraphlegic with albuminous urine after three weeks, and finally died. The bloody urine was not marked in either case.

"It is suggested that streptococci may be only one essential condition in the causation of the disease. Its presence may also contribute a predisposition to subsequent attacks.

"Some of the methods of treatment advocated for azoturia might be regarded as empirical in that they are based on no known knowledge of its pathology. The therapeutic agent which has been perhaps most commonly employed of any of those recently advocated is potassium iodide. Reports for the past year concerning this treatment would indicate that it merits some consideration. This method is based on Ligniéres' theory of the etiology and pathology of azoturia. And it is interesting to know that Dr. W. A. McClanahan, of Redding, Iowa, conceived the notion that if Ligniéres' theory of the cause was sound, potassium iodide should be of some service in the treatment of the disease.

"The methods of administering were injections into the bladder in doses of one-half ounce in one-half pint of water, repeated if necessary. The drug is also given per orem in usual doses. This treatment is followed quite extensively by practitioners in the Eastern States, and with favorable results. The discrepancy sometimes noted is difficult to explain. In some hands the results are uniformly good, improvement being observed within a short time, recovery in some cases in from three to six days. A second method of treatment advocated by Dieckerhoff is the administration of bicarbonate of soda, in large doses often repeated. This is a simple method and perhaps efficient in some hands. Recently the intravenous injections of normal salt solution alone or in conjunction with other treatment has been reported as giving good results. This line of treatment is in keeping with the most generally accepted theories of the cause of the disease, and may exert its favorable ac-

tion as diluent to the plethoric blood, and it may be preferable to the common practice of bleeding to that end.

"This consideration of azoturia suggests that disease of cattle, which in some of its features bears a close analogy to azoturia, namely parturient paralysis. In the treatment of this disease much progress has been reported in the year just passed. We refer to the air or oxygen treatment. This is claimed by some enthusiasts to be as much of an advance over potassium iodide as *it* was over the former methods of catharsis or drenching. It is interesting to follow the evolution of this form of therapy. In a German publication in 1902, Schmidt reports an experiment on the injection of substitutes of K. I. into the udder, such as warm water, sodium iodide, potassium bromide, etc. But he finally concludes that the use of air in connection with the original treatment hastens recovery in almost all cases. Hence it is believed that the most important modification of the potassium iodide treatment thus far proposed is the use of sterilized air or oxygen. In addition to giving more uniform results, it is claimed that cows recover the normal flow of milk in much shorter time than with potassium iodide infusion.

"This announcement by Schmidt was confirmed by Nevermann, who recommended the injection of air into the udder after the infusion of potassium iodide. Teetz, another German, offers the theory that, since he believes parturient paralysis is due to the excessive anæmia of the brain occasioned by excessive flow of blood from other parts of the body to the udder at the beginning of the period of lactation, the injection of air and the infusion of the iodide may effect a forcing out of some of the blood from the udder, thus relieving to a certain extent the cerebral anæmia. In 1903, M. Emile Thierry contributed an article to the *Journal of Practical Agriculture*, of Paris, on the treatment of parturient paralysis, which had been observed and successfully practiced by M. Knusel, of Lucerne. This treatment consisted of the injection of pure oxygen into the udder. From six to ten litres of oxygen were injected, the gas being compressed to twenty-five atmospheres in a special apparatus prepared by Hauptner, of Berlin. The teat was washed and disinfected, the teat-tube introduced and oxygen slowly released. After two quarters were thus filled the teats were compressed and the udder massaged, to thoroughly distribute the gas throughout the granulated tissues. The same operation was repeated on the other two quarters. The author's theory of the oxygen is that the toxins produced in the udder and passed into

the udder circulation are produced by anærobic bacteria, whose action is prevented by the presence of oxygen.

"Doctors Tennet and H. Barnes, of London, Ont., have practiced this method for nearly a year and report 95 per cent. of cures. The treatment has been adopted by other practitioners in this country, and so far as we can learn the results have been uniformly good. The apparatus required by the different practitioners varies all the way from a goose quill to intricate systems of tanks and valves. In this method of administering air, it seems to be the practice not to milk the udder out, but only relieve the tension occasionally. This bears out the theory advanced by Dr. Wheeler, of Biltmore, N. C., that parturient paralysis may be prevented by drawing off small quantities, two or three pounds of milk at frequent intervals, every six hours, for the first three days after calving.

"The work of Ligniéres with pasteurelloses is deserving much attention at this time, although still preliminary. He has grouped under the name pasteurelloses all those infectious diseases formerly included in the hæmorrhagic septicæmia group. This name is preferred as being based on their bacteriological identity, while hæmorrhagic septicæmia implies an anatomical character which is not constant. One of the points which these diseases have in common is that a previous non-fatal attack confers immunity. This fact suggested to Ligniéres the production of a polyvalent vaccine against all pasteurelloses. For this purpose he employed bouillon cultures, containing six different pasteurellas, maintained at a temperature of 42 to 43° C. for attenuation. Those subjected to this heat for five days constituted the first vaccine; those for only two days the second vaccine. This vaccine was inoculated under the skin in doses of from one-eighth to one c.c., according to the species and weight of the animal, with an interval of twelve to fifteen days between the first and second. It was also found that hyperimmunized animals against any one of the pasteurellas furnished an active serum against it. Ligniéres found that this principle existed for all pasteurellas and that an anti-pasteurellic serum possessed a preventive and curative action against all pasteurellas. This action was most marked toward that pasteurella used in the production of the serum, and this fact demonstrates the close relationship between all pasteurellas. On this basis the polyvalent serum was prepared, the immunization being produced by the vaccine above referred to. The common veterinary pasteurellas for which these polyvalent vaccines

and serums have been produced are a lombriz (A) in sheep, white scours of calves, typhoid affections and infectious pneumonia of horses, and swine plague.

"The announcement of the results of Ligniéres' investigations carries with it considerable weight, and may determine a new epoch in the treatment of these diseases.

"More notable research carried on during the past year is that of Pearson and Gilliland, upon the immunization of cattle against tuberculosis. From the experiments thus far conducted it is concluded that by means of intravenous injections of human tubercle bacilli the resistance of young cattle to virulent bacilli of bovine origin may be greatly increased. Even to the extent that the animals are not infected by an inoculation capable of causing death or at least extensive infection in cattle not thus protected. Intravenous injections of much larger quantities of human tubercle bacilli may be safely given. These authorities still have experiments in progress for the purpose of determining the duration of immunity thus produced and the effectiveness of this method of treatment in protecting animals against natural infection.

"In the line of treatment we find several new therapeutic agents, the merits of which are not as yet determined, though they have been quite extensively used.

"*Echinacea.*—This is an indigenous plant to the Western States, the root of which has been used to some extent in human medicine for the past quarter of a century. Dr. P. A. Fish, of the New York State Veterinary College, after experimenting with the therapeutic action of this drug, concludes that it is a valuable agent for the removal of morbid material from the system ; that it exerts a beneficial effect upon the nutrition of the system, presumably through its eliminating action upon the waste material, thus causing a demand upon the part of the tissues for a new and better nourishment as evidenced by a stimulated appetite. Its action may in some respects resemble that of the alternative in that it seems to stimulate and improve the body fluids, probably through capillary and lymphatic circulations. While in some cases the effects may be reasonably prompt, in others the changes may be gradual and a long course of treatment be required. It has been used by some Eastern veterinarians in cases of colic, general inanition, strangles, fistulous withers, catarrhal fever, influenza and purpura hæmorrhagica. The success in the use of the drug so far would indicate that it may be a valuable addition to veterinary therapeutics.

"*Tallianine.*—Another agent recently introduced into this country and extensively advertised, is Tallianine, introduced into veterinary therapeutics by the French veterinarians Piccard and Cotty. Its most characteristic action is claimed to be the physiological property of rapidly increasing the number of the leucocytes in the circulating blood. There even seems to exist a certain ratio between the amount of Tallianine injected and the degree of hyperleucocytosis induced. This increase was found to be chiefly in polynuclear-leucocytes. The rapidity with which this action is brought about is more rapid in small experimental animals than in equine or bovine. This agent has a special significance since the theory has been advanced that the fibrin ferment contained in the blood is proportional to the number of leucocytes present. Tallianine is now used with reported good results in cases of purpura hæmorrhagica and other ailments in which its physiological action might be availed of to advantage.

"The past year has furnished considerable data concerning the importance of silver salts. In veterinary therapeutics those most commonly used, aside from the nitrate, are collargol, protargol, the citrate of silver, known as itrol, and the lactate, known as actol. The first of these has been used with success in cases of purpura, typhus, diarrhœa in calves, broncho-pneumonia, distemper and suppurations. The last-named preparations have been found to be efficient germicides, useful in the treatment of articular wounds, fistula, canker, and diseases of the feet, as well as all suppurative conditions. Several other silver salts are mentioned, but those named have been most extensively employed.

"In speaking of the employment of air in veterinary therapeutics, it is interesting to note the experiments of Moore, in the use of air and oxygen in checking the course of tuberculosis in tuberculin-reacting cattle. These experiments, while only preliminary, demonstrated the fact that cattle subjected to inflations of the thoracic and abdominal cavites with air or oxygen finally failed to react to subsequent tests, although found to be still suffering from generalized tuberculosis, upon post-mortem examination. This suggested the possibility of resolution taking place under such circumstances and adds more evidence to the importance of air as a therapeutic agent.

"Compressed air has also been advanced for the treatment of ulcers, fistulæ, and other chronic suppurations.

"Another therapeutic agent which appears to be coming

more into favor is the intra-tracheal injection of various antiseptics in cases of pulmonary infection. A French veterinarian uses the following formula for disinfection of the respiratory passages for cases of infectious pneumonia in the horse:

"Eucalyptol	5	grammes.
"Guaiacol	5	"
"Menthol	5	"
"Essence of thyme	10	"
"Essence of wintergreen	10	"
"Essence of cinnamon	10	"
"Essence of turpentine	30	"
"Iodoform	10	"
"Pure sterilized olive oil	150	"

"This mixture is claimed to bring about a drying of the mucous surfaces, a cessation of the coughs and more rapid absorption of medicinal substances by the mucous membrane. It is used in doses of 20 c.c. injected into the trachea in the ordinary manner. Various serums have made their appearance on the market during the past year and the value of the serum therapy appears to be increasing (especially from those serums referred to under the pasteurelloses); there is an antistreptococcic serum prepared in the Pasteur laboratory in Stuttgart which is found effective to a certain degree. In cases of contagious coryza, and especially in morbus maculosus. A great deal of investigation along these lines is being done at the present time, and it is highly probable that within a few years serum therapy will be an important adjunct to our present method of combatting infectious diseases.

"We might note briefly in passing the reported successful treatment of anthrax with creolin, given by way of the mouth and per rectum, also the reported prompt recovery of a case of tetanus in a horse, following the administration of enormous doses of hydrocyanic acid, given with intent to kill.

"A committee report on disease and treatment before this State Association would hardly be complete without some reference being made to the present condition of affairs about the State. Veterinarian Koto has kindly furnished us with a brief statement of the diseases most prevalent in this State at the present time.

"'Jan. 21, 1904.

"'*Dr. Carl W. Gay, Ames, Iowa.*

"'DEAR DOCTOR:—Your favor of the 17th received upon my arrival home, and as my time is so fully occupied I will only

give you a brief sketch of a few of the diseases now encountered. At the present time there is no particular outbreak among domestic animals. We have perhaps had more frequent calls pertaining to verminous bronchitis than any other cause. This is no doubt due to the fact that the excessive rains of the last two seasons would have a tendency to increase parasitic troubles. We have held several post-mortems and found numerous quantities of *Strongylus micrurus*.

"'Our department has been called on in several instances to investigate outbreaks among Angora goats which has caused great losses to the owners and threatened to ruin the goat industry. This new and interesting disease has been termed "Takosis" by the Bureau of Animal Industry. It is a very progressive and fatal disease, the death loss in many instances reaching 75 per cent. The disease presents many of the symptoms usually accompanying parasitic disorders and is characterized by great emaciation and weakness with symptoms of diarrhœa and pneumonia, sometimes accompanied by a slight cough. About the first noticeable symptoms would be the drowsy and lifeless appearance of the animal, it often lying down with its head turned back on its body. As the disease progresses the animal becomes so weak it is unable to rise and finally succumbs to the disease. As for treatment prophylaxis or preventive measures are recommended. Sudden climatic changes should be avoided. The animal should be provided with good, clean shelter situated on land where there is natural drainage, give them plenty of good wholesome food and pure water.

"'Glanders has been quite prevalent throughout the State and we have had also numerous reports of tuberculosis. Trusting this will be satisfactory, I am, Yours very truly,

"'P. O. KOTO.'

"It is recommended by this Committee that the members of the Association report from time to time their success in the application of the more recent methods of treatment. In this way much valuable data could be collected and presented for discussion at the subsequent meetings.

"Respectfully submitted,

"CARL W. GAY, *Chairman.*

"W. A. HECK."

NORMAL SALINE SOLUTION IN TREATMENT OF AZOTURIA.

To save time and save going over the ground twice, it was decided to hear Dr. Clinton report on the normal saline solution

as used in azoturia, before proceeding with the discussion.

Dr. Clinton reported extemporaneously: that upon receiving a call to see a case of azoturia, he took along his attendant for a caretaker, two jugs of dist. H2 O; boiled water does not act as favorably, causes abscesses; a fountain syringe with an attachment for two hypodermic needles, always sterilized; used 11 gr. tablet in 4 oz. H2 O dist. and injected deep into the muscles, the full length of the needles. When the solution quits running insert needles at the edge of the swelling caused by the first injection and follow this up, even going upon the neck, if necessary. Gave as a rule from 12 to 16 quarts, but had given as high as 24 quarts to one horse, continued over several days, of course. Gave physics and opiates, when necessary; used catheter about four times. Most cases regained their feet in from 24 to 36 hours; the longest case was down 48 hours; was turned over every few hours. Had treated 26 cases; all but five were down, and only two died. Gave credit for good care by experienced attendant.

Abscesses occasionally followed, but came out all right after having been opened and with ordinary surgical care recovered.

Discussed by S. H. Kingery, who related sad experience with atrophy following azoturia. L. U. Shipley suggested tinct. iodine or bichloride, 1 to 250, or even 1 to 125; 1 oz. each time, repeated in ten days. P. O. Koto suggested deep firing and close together, sets up a deep seated inflammation and cures.

W. A. Heck said to leave alone; that it would fill out as quickly as when treated.

Hal C. Simpson reported that Merck & Co. put out a purified ol. turpentine, that he used in atrophies successfully.

C. E. Stewart, referring back to committee report about verminous bronchitis, reported that turpentine intra-tracheally, 4 c.c. to 10 c.c., if good sized and strong, in from 7 to 10 days and second injection and even a third if needed; splendid results and never lost but one and it was very weak.

P. O. Koto and C. W. Gay reported no successful treatment. Meeting adjourned to meet promptly at 8 o'clock P. M.

EVENING SESSION.

Meeting called to order by President Shipley at 8.15 P. M.

New Business.—Moved that a committee of five be appointed to draft a fee bill to be reported at this meeting. President Shipley appointed Hal C. Simpson, W. A. Heck, C. A.

Clinton, S. H. Bauman and C. E. Stewart. Moved that the Secretary be instructed to revise and bring up to date Constitution and By-Laws and to have 200 copies printed for distribution.

Dr. R. R. Hammond not being present, the Secretary read his two reports of cases.

Dr. J. Miller presented his paper "A New Treatment for Parturient Paresis."

Dr. T. J. Neiman presented a report of a case of "Impotence of the Stallion."

Dr. G. M. Walrod presented his paper, "Hypertrophied Spleen," discussed by several. Dr. J. H. McNeil reported a case found at the college clinic a short time ago.

Dr. P. Malcolm presented a paper on "Amputation of the Penis." Dr. F. H. P. Edwards presented two reports of cases, one of a "Stone in the Urethra," and he had the stone with him; also diseased fifth and sixth lower molars. They were both very large and he had much trouble in removing them. The patient died. Both cases were thoroughly discussed.

Motion to adjourn until 9 A. M. for the clinic.

SECOND DAY'S PROCEEDINGS.

Owing to the extreme cold weather and the roads being so rough, it was impossible for parties furnishing patients for the clinic to be present, so after waiting at Dr. H. E. Talbot's office for some time, it was finally decided to have a morning session.

Meeting called to order by President Shipley at 10.30 A. M. Dr. Austin read his paper, "Some Facts and Ways of Proving Them to Our Patrons." Dr. W. A. Stuhr read a splendid paper on "Some Facts Concerning Metabolism."

Meeting adjourned at 12.40 P. M. to convene again at 1.30 P. M.

AFTERNOON SESSION.

Dr. Kay being absent, the Secretary read his paper, which was freely discussed.

Secretary read a communication from John R. Mohler, relative to a contribution toward a monument to Nocard. The Secretary was instructed to forward $10 to Dr. Mohler as the contribution of this Association.

President called S. Stewart, who gave an interesting talk regarding the advisability of collecting statistics on different diseases. Appoint a committee, let them send out blank forms for the members to fill out and return. It was decided that the Committee on Diseases and Treatment be authorized to talk

this up and to get as many as possible of the members to coöperate, and that they be limited to necessary expenses, the committee to decide what was necessary.

The Board of Censors reported favorably on the applications for membership of the following: B. Harmon, Decorah; E. G. Piper, Ida Grove; H. A. McIntire, Maquoketa; C. E. Baxter, Oakland. The report was adopted by vote. Moved that the rules be suspended and that the Secretary be instructed to cast the vote of the Association for the parties named. Carried. The Secretary declared them duly elected to membership. Board of Censors reported favorably on the applications for reinstatement into active membership of S. S. Whitbeck, Decorah; R. Philip Thurtle, Commerce; J. O. Simcoke, Davenport. The report was adopted by vote. Moved that the rules be suspended and that the Secretary be instructed to cast the vote for the Association for the parties named. Secretary declared them duly restored to membership.

Dr. S. H. Bauman read a volunteer paper. A communication from *The Homestead* asking permission to publish some of the papers presented before the Association. It was decided that the proceedings should appear first in the REVIEW; afterwards, if *The Homestead* still wanted to publish any of the papers, the Secretary was to furnish them.

The report of the committee to draft a fee bill was read by W. A. Heck. Moved that the bill be adopted as read and that 1000 be printed for distribution.

Legislation was next discussed by P. O. Koto, H. E. Talbot, P. Malcolm, C. E. Stewart and others. Dr. Gregory, a member of the House from Adams County, addressed the Association in a nice twenty-minute talk. He thought we should have what we asked and offered his services in our interests.

Moved and carried that we tender a vote of thanks to Dr. Gregory for his talk and his promise of efforts in our behalf.

Moved by P. O. Koto that the next Committee on Legislation be empowered to draft a bill whereby ($1) one dollar annual renewal fee may be included, with such other legislation as they may deem necessary.

ELECTION OF OFFICERS.

Moved by P. O. Koto that the Association take an informal ballot for President. The President appointed W. A. Heck and W. R. Fullerton tellers. Dr. J. Miller having by far the most votes, it was moved by C. A. Clinton that the rules be suspended, and that Dr. J. Miller be unanimously elected President.

Carried. Tellers escorted Dr. Miller to the chair. President Shipley thanked the Association, introduced J. Miller and retired. President made a short talk, thanking the Association.

Moved by P. O. Koto that the rules be suspended and that we elect other officers by acclamation: C. E. Stewart was elected First Vice-President; S. K. Hazlet was elected Second Vice-President; Hal C. Simpson was elected Secretary and Treasurer.

The report of the Committee on Resolutions was read by W. E. Miller, Chairman, and adopted.

RESOLUTIONS ADOPTED.

"*Mr. President and Members:*

"Your Committee on Resolutions beg leave to report as follows:

"WHEREAS, We learn with sorrow that Dr. F. M. Roy, of Manning, Iowa, a member of this Association, has been afflicted by a partial stroke of paralysis, be it therefore

"*Resolved*, That we extend to himself and family our sincere sympathy in the affliction which has befallen him, and heartily hope for his speedy recovery.

"WHEREAS, The matter of good roads has become a national question, and as the Department of Agriculture and the President, in his message, recommends the building of good roads, and in his address delivered before the National Good Roads Convention at St. Louis last April heartily and earnestly commends this movement, be it therefore

"*Resolved*, That we are heartily in favor of the movement for the improvement of the public roads, and that we endorse the Brownlow bill (House Records No. 4508. Senate Record No. 2539) and that we forward a copy of this resolution to our Senators and Representatives, asking their support of this bill.

"WHEREAS, In the removal of Dr. John J. Repp from our State we have lost a faithful and conscientious worker for the advancement of the profession, be it therefore

"*Resolved*, That we extend to our former Secretary, Dr. John J. Repp, our hearty good will, an expression of our high appreciation of his ability and generous efforts in behalf of our Association and our best wishes for his success and the happiness of himself and family in their new home.

"WHEREAS, It has been the experience of all graduate veterinarians that a thorough course in a recognized veterinary school is necessary before a man is competent to treat domestic animals successfully, and

"WHEREAS, That we, the Iowa State Veterinary Medical Association, learn that a correspondence school is being conducted in this State,

"*Resolved*, That we express our strong disapproval of the instruction of non-graduates in any other than the regular undergraduate course in a recognized veterinary college.

"*Resolved*, That we extend our thanks to Dr. H. E. Talbot for his able efforts in contributing to our entertainment; also to the Capital Lodge, No. 106, I. O. O. F., for placing their lodge rooms at our disposal.

S. H. BAUMAN,
"F. F. PARKER,
"W. E. MILLER."

The Secretary was allowed $20 for editing and typewriting the proceedings. Secretary was allowed $5 to pay for use of hall.

The report of the Judiciary Committee was read and adopted as read.

REPORT OF JUDICIARY COMMITTEE.

"We, the Judiciary Committee of the I. S. V. M. A., after a careful inquiry, find that Dr. A. T. Peters, of Lincoln, Neb., an honorary member of this Association, has been guilty of non-professional conduct in that he has become a teacher in a correspondence school of veterinary science for the express purpose of teaching veterinary science to farmers, breeders and non-graduate veterinary practitioners. We therefore recommend that he be expelled from membership in the Iowa State Veterinary Medical Association.

T. A. SHIPLEY,
"HAL. C. SIMPSON,
"W. H. AUSTIN,
"H. L. STEWART,
"L. U. SHIPLEY."

Meeting adjourned, subject to call of President.

SCHEDULE OF FEES.

General Practice.

Visits in city or town: $1.00 to $2.00.

Mileage in county: $1.00 first mile and 50 cents per mile for each additional mile.

Mileage on railroad:

Prescribing for each additional patient at same visit, 50 cts. each.

Night calls: Extra fee.

Remaining in attendance all night: $10.00.

Detention in addition to visit, per hour $1.00 to $2.00.
All day service: $10.00 and expenses, and upwards.

Surgical Practice.

Ordinary visits, same as general practice; dressings and medicines extra.
Minor operations: $1.00 and upwards.
Major operations: $5.00 and upwards.
Suturing and dressing wounds: $1.00 and upwards.
Neurectomy: $5.00 (and upwards) to $25.00.
Removal scirrhous cord: $5.00 and upwards.
Amputation of penis: $10.00 and upwards.
Tracheotomy: $5.00 and upwards.
Use of actual cautery: $5.00 to $25.00.
Setting of fractured limbs: $2.00 and upwards.
Castration, straight colts: $1.00 to $5.00.
Castration, cryptorchids: $10.00 and upwards.
Vaccination, black-leg: 35 cents and upwards.
Ovariotomy, mare: $25.00.
Ovariotomy, cows: 50 cents, in bunches.
Ovariotomy, bitches: $2.00 to $5.00.

Obstetrical Practice.

Delivery of fœtus, normal distokia, mare: $5.00 to $25.00.
Delivery of fœtus, normal distokia, cow: $5.00 to $15.00.
Cæsarian operation: $2.00 to $25.00.
Removal of placenta, mare: $5.00 to $10.00.
Removal of placenta, cow: $3.00 to $10.00.
Replacing uterus, mare: $10.00 and upwards.
Replacing uterus, cow: $5.00 and upwards.

Dentistry.

Dressing molar teeth: $1.00 to $2.00.
Cutting elongated molars: $2.00 to $3.00.
Cutting elongated incisors: $2.00 to $5.00.
Extracting wolf teeth: 50 cents per tooth.
Extracting temporary incisors: 50 cents per tooth.
Extracting molars: $3.00 to $5.00.
Trephining sinus for removal of molar teeth: $5.00 and upwards.
Consultations: $5.00 to $10.00 and mileage.
Examination of horses for soundness: $2.00 to $10.00.
Post-mortem examination: $5.00 to $25.00.
Chemical and microscopical examination of urine and milk: $5.00 and upwards.

Chemical analysis of poisons: $5.00 and upwards.
Professional certificates: $2.00 and upwards.

Office Practice.

Advice: $1.00.
Advice by letter or telephone: $1.00.

THE ATTENDANCE.

Those in attendance during the meeting were as follows, as determined by the registration cards:

Members.—W. E. Miller, Cherokee; S. Stewart, Kansas City, Mo. (Honorary); M. H. Reynolds, St. Anthony Park, Minn. (Honorary); W. H. Austen, Newton; H. A. McIntire, Maquoketa; B. Harmon, Decorah; Wm. Hamilton, Boone; W. A. Heck, West Liberty; S. S. Whitbeck, Decorah; Anton Kaderbek, Ft. Dodge; M. Jacob, Ames; J. R. Sanders, Corydon; W. A. Stuhr, Ames; P. Malcolm, New Hampton; Carl W. Gay, Ames; O. W. Rowe, Keokuk; C. W. Stevens, Knoxville; L. U. Shipley, Sheldon; G. M. Walrod, Storm Lake; J. W. Bunker, Winterset; A. S. Brodie, Cedar Falls; F. J. Neiman, Marshalltown; Carl Olson, Sac City, F. H. P. Edwards, Iowa City; F. F. Parker, Oskaloosa; J. Miller, Ottumwa; H. C. Simpson, Denison; F. H. Thompson, Des Moines; A. F. Baldwin, Creston; C. E. Stewart, Chariton; S. H. Kingery, Creston; H. E. Talbot, Des Moines; C. A. Clinton, Laurens; C. J. Hinkley, Odebolt; J. H. Spence, Clinton; W. R. Fullerton, Dubuque; P. O. Koto, Forest City; J. W. Haxby, Villisca; H. L. Stewart, Lacona; R. P. Thurtle, Campbell; S. K. Hazlet, Oelwein; J. J. Richardson, Marcus; C. A. Ashworth, Ashawa; S. A. Bauman, Birmingham; T. A Shipley, Cedar Rapids.—(45.)

Visitors.—Mr. Gilbert (Member Legislature), Creston; H. G. Moore, Chicago, Ill.; S. H. Ward, St. Paul, Minn.; R. Mollance, Reinbeck; Albert Stigors, Stuart; J. H. White, Ames; Foster Pierce, Ames; W. V. Glaisyer, Ames; R. J. Moreno, Ames; J. W. Edwards, Stuart.—(10.)

HAL C. SIMPSON, *Secretary.*

[NOTE.—All the papers and reports of cases presented at this meeting are in the hands of the REVIEW, and will be published as rapidly as possible.—EDITOR.]

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-second meeting of this Association was opened in due form at 2.30 P. M., by President H. M. Gohn, of St.

Johns, in the parlor of the Hotel Downey, Lansing, Michigan. Roll-call showed the following members present: Drs. J. Black, Geo. W. Dunphy, W. J. Byers, D. Cumming, Wm. Jopling, Geo. C. Moody, A. McKercher, H. F. Palmer, J. C. Whitney, Geo. Waddle, John Russel, J. W. Brodie, H. S. Smith, Robertson Muir, H. H. Clement, Hal L. Balenger, W. W. Munger, H. Wynn Nobles, Jas. S. Donald, T. G. Duff, H. M. Gohn, Jas. Harrison, W. S. Hamilton, J. J. Joy, R. W. McDonald, D. G. Sutherland, J. E. Ward, J. J. Walkington, F. C. Wells, C. A. Waldron, W. N. Armstrong, Thos. Farmer, Charles C. Slaght. Visitors present: Drs. J. B. Stevens, Yale; C. C. Stevens, Byron; R. F. Erwin, Alma; S. M. Mizer, Leslie; C. H. Adams, Carson City; Henry M. Armour, Litchfield; N. B. Allen, Sault Ste. Marie; C. C. Petty, Lake Odessa.

Minutes of meeting of February, 1903, were read and approved as read.

The President then addressed the meeting. He said he was pleased to say that our membership was steadily increasing, but there were perhaps not more than one-half eligible in the State who are members of this Association, and urged everyone to make an effort to increase our membership. The efforts of our Legislative Committee were fruitless during the last year, and he recommended that the matter be further left in their hands. In speaking of outbreaks of hog cholera in different parts of the State, he advised the veterinarians to send specimens to the Bacteriologist at the Agricultural College, Prof. Marshall, who was always ready to examine them. We as veterinarians could do much towards securing a better knowledge of contagious diseases of live-stock of the State by sending specimens to the M. A. C. for examination. He urged all that could do so to join the A. V. M. A.

After the President's address applications for membership were presented by the following gentlemen: Drs. C. C. Stevens, Byron, age 24, graduate O. V. C., '02; C. H. Adams, Carson City, age 37, O. V. C., '93; W. L. Brenton, Detroit, age 20, O. V. C., '03; Henry M. Armour, Litchfield, age 28, O. V. C., '02; R. F. Irwin, Alma, age 28, O. V. C., '00; Thomas W. McConnell, Moline, age 35, O. V. C., '92; S. M. Mizer, Leslie, age 26, O. V. C., '01; D. B. Allen, Sault Ste Marie, age 30, O. V. C., '98; C. C. Petty, Lake Odessa, age 31, O. V. C., '02. All were accompanied by the required fee. The applications were referred to the Executive Committee. Dr. J. B. Stevens, of Yale, applied for reinstatement. This application was referred to the

same committee. After a session of the above committee they recommended the admission of all the above applicants, Dr. J. B. Stevens to pay up all dues accumulating prior to his suspension. Upon motion, the Secretary was instructed to cast the vote of the Association for the above applicants, which was done. They were therefore declared elected to membership by the President.

The Secretary-Treasurer's report showed an unpaid balance of $29.45 at the close of the year's business. His report was accepted and referred to the Committee on Finance, who reported it O. K.

Correspondence was read from absent members and others, which was accepted and placed on file.

Dr. W. B. Austin and Dr. Chas. Manning, members of this Association, were reported deceased since our last meeting. Dr. Austin's widow sent a list of veterinary instruments, which the Secretary asked the members to assist her to sell.

Moved and supported that the President appoint a Committee on Resolutions. Carried. Drs. Sutherland, Muir and Hawkins were appointed as such committee.

Dr. Jopling, chairman of the Committee on Intelligence and Education, gave a comprehensive report,* which was listened to with much attention. The doctor's report showed much time and care was spent in its preparation. It was discussed by Dr. Palmer and others. Dr. Muir in discussing it advised that those requiring diplomas from American institutions should be required to pass an examination before a council appointed by the Government. Dr. Hawkins said that in all probability the O. V. C. will have no more two-year terms.

Adjourned at 5.30 to re-convene at 7.30.

Dr. F. C. Wells, chairman of Committee on Legislation, made a report of its doings the past year. He attributed the defeat of our practice bill to the bull-headedness of some of the legislators and to the attitude of *The Michigan Farmer*, which opposed the bill. The Legislature as a whole were favorable, but our defeat showed what a few stubborn individuals could accomplish. The bill passed the Committee on State Affairs in good form, but the House was inclined to mutilate it so badly that it was thought best not to push it. It was therefore withdrawn. The sanitary bill was defeated by the Live-Stock Sanitary Commission, who saw in its passage the loss of their jobs.

* Will be published in an early number of the REVIEW.

Dr. J. B. Stevens, discussing the report, suggested that owing to the ignorance of the farmer of the present sanitary law, it would be well for each and every one of us to point out to them while in contact with them throughout the year, the drawbacks and uselessness of the present law and point out where it gives them the worst of it. Drs. Harrison, Gohn and others thought it well to educate the farmers regarding the situation through their clubs, grange and institutes, by sending copies of the proposed bill to them.

Dr. H. F. Palmer presented a very excellent report of the Committee on Diseases, prepared by the Secretary of the committee, Prof. Marshall, of the M. A. C. They spoke of the symptoms accompanying hog cholera, of sore feet and mouth. Dr. Wells also saw these symptoms. In response to letters sent out by the secretary of the committee, the following diseases were reported in the State by different veterinarians throughout the commonwealth. Dr. Jas. Harrison, Maple Rapids, reported azoturia, and in cattle parturient paresis, as the diseases most prevalent in his locality. He also reported hog cholera. Dr. H. M. Gohn, St. Johns, reported hog cholera and lump jaw. Dr. W. R. Murtry, Jonesville, contagious ophthalmia in cattle, introduced in the locality by stock steers from the West, purchased at the Chicago Stock Yards. Dr. H. S. Smith, Albion, six cases of cerebro-spinal meningitis in horses, and rabies in 23 hogs, 6 cattle, 1 horse and 2 dogs. Dr. J. Black, Richmond, reported two cases of cerebro-spinal fever in cows.

Dr. H. F. Palmer read a paper, "The Veterinarian in the West," * by Z. Veldhuis, a meat inspector of Kansas City, Mo., (a member of our Association), which was very interesting. In discussing it Dr. Hawkins asked if any of the doctors present had seen any scab in cattle. Dr. Palmer had seen it, and said "kreso" was a sure cure for it.

Dr. C. A. Waldron read a paper on "So-called Pinkeye in Cattle," * which brought out a spirited discussion, the result of which would make it apparent that there is more than one contagious eye disease among cattle in Michigan. Dr. Wells, State Veterinarian, stated that he agreed with Dr. Waldron that the disease was brought in by Western cattle. He reported a case in which seven head died from the disease in one herd. Dr. Hawkins reported seeing an extensive outbreak just across the river from Detroit, and stated that its coming from the West

* Will be published in an early number of the REVIEW.

was out of the question in this case; no deaths. Dr. Stevens reported cases in his neighborhood that were not treated and permanent blindness resulted in many instances. Dr. Adams reported 65 cases in a herd, with one death and no blindness. These cases were all treated scientifically. He claimed that the disease was introduced into the herd by a Western steer. Dr. Waldron thought that some of the cases reported may have been malignant catarrh.

Moved and supported that the President appoint some member to consult with the Secretary of State and find out what steps will be necessary to change the Articles of Incorporation so as to make it possible to leave the selection of the place of the annual meeting to the Executive Committee. Carried. The President appointed Dr. Wells as such delegate.

Adjournment until 9 o'clock A. M., Feb. 3d.

Feb. 3.—Meeting called to order at 9 A. M. Dr. Jopling when called upon for his paper excused himself, saying he had not prepared it on account of sickness.

Dr. H. M. Gohn read a paper upon "Some Foreign Bodies in the Stomachs of Cattle."* He exhibited a rib of an umbrella 25 inches long which had been swallowed by a cow and which was removed by the doctor from the side, where the end of it was felt under the skin. A photograph of the cow was exhibited showing the point from which the steel rib was removed on the left side from the next to the last intercostal space. Dr. Duff, discussing Dr. Gohn's paper, said a case occurred in his practice that, following an effort by the owner to pass a broomstick (in a case of choke), broke about 13 inches off the stick, which was swallowed, and was found in the rumen in a harmless condition on post-mortem, two years afterward. Dr. Dunphy spoke of a case he had showing symptoms of tubercular trouble, very emaciated, cough, etc., which was killed and post-mortem held, which revealed a large abscess in the lungs, caused by a split cut-nail, a part of which was embedded in the wall of one of the cardiac ventricles.

Dr. Dunphy gave a very interesting and instructive lecture on the "Contagious Diseases of the Hog." He spoke of hog cholera, swine plague, tuberculosis and diseases of a like nature, some diseases which were confined to one farm and which he thought were due to diet and were not contagious.

Dr. Palmer, who has been conducting experiments with hog

* Will be published in an early number of the REVIEW.

cholera vaccine during the past year, also gave a very interesting talk on this subject.

Dr. Henry B. Baker, Secretary of State Board of Health, gave a pleasant talk. He spoke of the ravages of rabies and tuberculosis throughout the State, and the importance of the veterinary profession in the sanitary affairs of the State.

Dr. Waldron spoke of serum that he had used in hog cholera, which he thought it was his duty to mention, as it had acted in a very satisfactory manner in his hands.

Dr. Thos. Farmer read a very able paper upon "Heredity,"* which was listened to in a manner which showed appreciation of the doctor's method of handling this subject.

It was moved and supported that the regular order of business be suspended and that the election of officers be proceeded with. Carried. The President appointed Drs. Jopling and Ballenger tellers. Dr. H. F. Smith was nominated for President. Moved and supported that the present officers all be declared elected by acclamation. Carried. Moved and supported that the Secretary cast the ballot of the Association for H. M. Gohn for President for the ensuing year. Carried. The Secretary cast the ballot as directed and Dr. Dunphy declared Dr. H. M. Gohn elected. Dr. Gohn resumed the chair. This procedure was followed in the election of all the remainder of the old elective officers, who were declared elected by the President.

Dr. W. A. Giffin tendered his resignation from the Association, which was accepted. He gave as his reason for the step the fact that he was no longer in the practice of veterinary medicine, having gone into the dentistry business. He regretted that he was compelled to withdraw, but thought best to do so.

Moved by Dr. Palmer and supported by Dr. Cummins that the rules be suspended and Dr. Giffin be elected an honorary member of this Association, as he had always been a very energetic member, had always done much as Secretary to increase the membership of our Association, and had only once during his entire connection with this body been absent from a meeting, and that time he was prevented by a broken hip. Motion carried and Dr. Giffin was declared an honorary member.

Dr. Wells, who had been delegated by the President to confer with the Secretary of State as to what steps would be necessary for this Association to take to make it possible for the Executive Committee to arrange for place of annual meeting, re-

* Will be published in an early number of the REVIEW.

ported that in order to change the place of meeting a vote of the Association must authorize the officers and Board of Directors to make the change. Moved and supported that the officers of this Association be authorized to change the Articles of Association so as to leave the selection of place and time of meeting to the Executive Board. After thoroughly discussing the motion, it was put to vote and declared lost.

Committee on Resolutions presented the following, which on vote was received and adopted :

"WHEREAS, It has pleased Him who doeth all things well, to take from us our fellow-members, Dr. Charles Manning and Dr. W. B. Austin, and

"WHEREAS, These men were identified with the active work of the Michigan State Veterinary Medical Association; therefore, be it

"*Resolved*, That we, as a Society, at this, our annual meeting, express our sincere regret that those who were so young should be suddenly cut off.

"*Resolved*, That we extend to the families of the deceased members our sympathy, and hope that they may be greatly sustained in this their great trial.

"*Resolved*, That copies of this resolution be sent to the families of the deceased members and that a copy be spread upon the minutes of this meeting."

"WHEREAS, It has come to our notice that Dr. A. H. Baker, of the Chicago Veterinary College, is a factor in the publication of a book along the lines of a farmers' adviser, and

"WHEREAS, It seems an injustice to the great mass of veterinary students that a book of such nature should be put in circulation; therefore, be it

"*Resolved*, That we express our disapproval of any member of the veterinary profession embarking along the lines of lowering the grade of our veterinary literature.

"*Resolved*, That we transmit a copy of these resolutions to the Secretary of the American Veterinary Medical Association, together with a copy of the printed circular advertising the book, and

"*Resolved*, That a copy of these resolutions be spread upon the minutes of this meeting."

"WHEREAS, There are frequent violations of the law as regards registration of the veterinarian; therefore, be it

"*Resolved*, That we, as a veterinary medical association, do sanction any legitimate action that may be taken by the State

Board of Veterinary Examiners toward the prosecution and conviction of those who are not complying with the law."

"WHEREAS, Our Society has for a number of years been endeavoring to secure legislation in favor of the veterinarian, and

"WHEREAS, Hon. J. L. Morrice and Hon. James Dunn gave us great assistance in this endeavor to secure the passage of our bills at the last session of the Legislature; therefore, be it

"*Resolved*, That we, in annual meeting assembled, do offer our sincere thanks to those gentlemen for their services; and

"*Resolved*, That we transmit a copy of these resolutions to each of the gentlemen and also that a copy be spread upon our records."

"WHEREAS, The appointment for the position on the State Examining Board of Veterinary Examiners has as yet not been made;

"WHEREAS, Dr. C. A. Waldron, of Tecumseh, has given efficient service on that Board; therefore, be it

"*Resolved*, That we, as a Society, favor the appointment of Dr. C. A. Waldron on the State Board of Veterinary Examiners;

"*Resolved*, That we ask Gov. Bliss to re-appoint Dr. C. A. Waldron.

"*Resolved*, That we place in Dr. Sutherland's hands a copy of these resolutions for transmission to Gov. Bliss.

"D. G. SUTHERLAND, J. HAWKINS, R. MUIR, *Committee.*"

Dr. W. S. Hamilton read a paper on "Veterinary Science,"* which was much appreciated by those who heard it. Dr. Hamilton always has something of extra worth in his papers.

Dr. James Harrison read a paper on the subject of "Complete Rupture of the Abdominal Muscles."† Dr. Hawkins in discussing the subject said that he had seen a case where a mare was ruptured so that her belly was not over eight inches from the ground, and she had five colts afterwards successfully while in that condition. A second case had a colt for each year for two years after rupture, and was then lost sight of. Dr. Sutherland told of one of his own mares that had eight colts after this accident. A second case he cited had died from internal hæmorrhage from the lesion. A third case had bred and foaled again successfully. Dr. Munger also reported a case where the mare had colts after a bad rupture. Dr. H. F. Smith reported two cases that resulted fatally. Dr. Duff reported a recovery. Dr.

* Will be published in an early number of the REVIEW.

† Published elsewhere in this number.

Slaght reported two cases of Cæsarian section in ruptured mares, the foal in one case living two weeks and dying from derangement of the digestive apparatus. In the second case the foal was raised to maturity.

Moved and supported that the Secretary send five dollars to the AMERICAN VETERINARY REVIEW for the Nocard Memorial Fund.* Carried.

Dr. H. F. Palmer volunteered to send in subscriptions to the AMERICAN VETERINARY REVIEW, saying he was not an agent nor in any way connected with that journal, but thought it was a journal that every veterinarian should read. Many others spoke in a very complimentary manner of the above periodical.

It was moved and supported that, owing to the extra work of the Secretary, that he be paid an additional ten dollars. Carried. The Secretary said that he appreciated the action very much, but could not accept the amount while we were in our present financial condition.

Officers for the ensuing year are as follows:

President—Dr. H. M. Gohn, St. Johns.

First Vice-President—Dr. Geo. W. Dunphy, Quincy.

Second Vice-President—Dr. H. S. Smith, Albion.

Third Vice-President—Dr. James Harrison, Maple Rapids.

Secretary-Treasurer—Dr. J. Black, Richmond.

Directors—Drs. J. C. Whitney, Hillsdale; Robertson Muir, Grand Rapids; D. G. Sutherland, Saginaw; Wm. Jopling, Owosso; C. A. Waldron, Tecumseh; W. H. Erwin, Howell.

The President appointed the following Committees:

Intelligence and Education.—Drs. Wm. Jopling, J. Drury, and R. W. McDonald.

Diseases.—Drs. H. F. Palmer, R. Muir, J. J. Walkington, Prof. C. E. Marshall, Secretary.

Finance.—Drs. S. Brenton, Geo. C. Moody, J. B. Stevens.

Legislation.—Drs. F. C. Wells, J. J. Joy, D. G. Sutherland, G. W. Dunphy, J. Black.

Adjourned.

J. BLACK, *Secretary.*

INDIANA STATE VETERINARY ASSOCIATION.

The thirty-second semi-annual meeting of this Association was held at the Indiana Veterinary College, Indianapolis, Ind., Jan. 6, 1904. The first session was called to order at 2 P. M. by

* Check received and forwarded to the French Committee.

the Vice-President, Dr. F. W. Anderman, and the following members responded to roll-call: F. W. Anderman, Hartford City; Wm. Axby, Harrison, Ohio; O. L. Boor, Muncie; E. M. Bronson, Indianapolis; F. A. Bolser, New Castle; James Crail, Shelbyville; W. B. Craig, Indianapolis; R. A. Craig, LaFayette; W. A. Dryden, Columbus; J. O. Greeson, Kokomo; Clarkson Gause, Carthage; J. J. Herron, Tipton; Robert F. Harper, Indianapolis; J. W. Klotz, Nobelsville; Walter Langtry, Fort Wayne; Frank Muecke, Indianapolis; Ferd. A. Mueller, Indianapolis; J. R. Mitchell, Evansville; Wm. F. Myers, Fort Wayne; E. H. Pritchard, Indianapolis; John E. Pritchard, Indianapolis; G. H. Roberts, Indianapolis; Thomas A. Siegler, Greencastle; I. E. Scripture, Frankfort; Samuel Springer, Cumberland; Claude P. Wilson, Greenfield, and about fifty visiting members of the profession.

Reports of the Treasurer and Secretary were read and adopted.

Vice-President F. W. Anderman then addressed the meeting at length on the subject of "The Many Recent Advancements Made by the Profession."

The chairmen of the different committees were then called upon to make their reports, and Dr. F. A. Bolser, as chairman of the Committee on Veterinary Legislation, gave a very interesting report on dealing with the legislative subject in this State, stating that the demand for veterinary legislation has immensely increased within the last year.

The following officers were then elected for the ensuing year:

President—F. W. Anderman.
Vice-President—W. B. Craig.
Treasurer—O. L. Boor.
Secretary—G. H. Roberts.

When the committees had made their reports and the business of a routine nature had been disposed of, the meeting adjourned and the following clinics were witnessed:

Dr. Thomas M. Hall performed peroneo-phalangeal tenotomy; oöphorectomy, by Dr. G. H. Roberts; Dr. W. B. Craig performed the operations of peroneo-tibial neurectomy, median neurectomy, and super-carpal tenotomy; Dr. A. N. Gurley, of Martinsville, trephined a case for nasal catarrh; Dr. O. L. Boor did some very nice work in caponizing.

Meeting adjourned to meet at State House at 7.30 P. M.

On reassembling, the routine business was again taken up,

and Drs. Harry E. Smock, Franklin; J. B. Archer, Spencer; H. L. Coote, Michigan City; J. L. Axby, Lawrenceburg; C. F. Collins, Bellmore; and O. C. Newgent, Russellville, were elected to membership.

A number of interesting papers by different members were read and discussed. Dr. A. N. Gurley read a paper on "Atrophy of Posteaspinatus Muscles"; Dr. O. C. Newgent, a paper on "Hæmorrhage of the Bladder in a Colt"; Dr. W. B. Craig, "The Hock"; Dr. G. H. Roberts, report on "Dislocation of the Fetlock Joint, with Recovery"; Dr. R. F. Craig, report on "Infectious Abortion"; Dr. J. R. Mitchell, report on "Fracture of Sesamoids, and Open Joint, Followed by Recovery."

Meeting adjourned to meet in September.

G. H. ROBERTS, *Secretary.*

CENTRAL CANADA VETERINARY ASSOCIATION.

This Association held its second annual meeting in St. Andrew's Hall, Ottawa, on Wednesday evening and Thursday morning, Jan. 27th and 28th.

Evening Session—Jan. 27th.—The meeting opened at 8.30 P. M., with the President, Dr. A. W. Harris, of Ottawa, in the chair. There were present: Drs. T. A. Allen, Brockville; J. J. McGregor, Carleton Place; W. C. Young, Almonte; P. J. Lynchke, Carp; A. S. Morrison, Chesterville; C. W. J. Haworth, Eganville; J. G. Rutherford, A. E. Moore, A. E. James, J. B. Hollingsworth, H. E. Marshall, W. W. Boucher and C. H. Higgins, of Ottawa; D. McAlpine, Brockville; W. D. Monk, South March; G. W. Higginson, Rockland; A. G. Young, Merrickville; T. Johnston, Peterboro; F. Fisher, Carleton Place; T. Thacker, Renfrew; and W. C. McGuire, Cornwall.

The minutes of the first annual meeting, held Feb. 5th, 1903, and of the various regular and special meetings of the Association, also the minutes of the meetings held by the Council, were read and approved.

The Constitution and By-Laws were adopted as printed with the exception of a few slight alterations.

Four new members were elected: M. Gallivan, Iroquois, Ont. (graduate of Queen's University, Kingston, 1899); Geo. W. Bell, Kingston, Ont. (graduate of Ontario Veterinary College, 1880); W. D. Monk, South March, Ont. (graduate of Ontario Veterinary College, 1887); R. H. McKinnon, Picton, Ont. (graduate of Ontario Veterinary College, 1873).

The next business in order was the President's address, in which he mentioned the origin of the Association, indicating that, starting with only twelve members, there are at the present time forty members in good standing. He praised the appointment of Dr. J. G. Rutherford as Chief Dominion Veterinarian, for with him originated the idea of having the Association, that the plans for entertainment, and the supplementing of his personal invitation to the American Veterinary Medical Association to hold its fortieth annual meeting in Ottawa, might be carried out. This meeting of the American Veterinary Medical Association was referred to as being the first held outside the United States since its organization. The fact was mentioned that the veterinary profession in Ontario was awakening and that there were evidences of increased interest in the profession, together with a desire that the standard of the only existing English-speaking veterinary college in Canada be raised, and also that legislation was already being talked of. The President urged that practicing veterinarians should assist in this effort toward legislation, stating that it was only by concerted action that it would be possible to obtain definite results.

The next business was the election of officers for the ensuing year, which resulted as follows :

Honorary President—Dr. J. G. Rutherford.

President—Dr. A. W. Harris.

Vice-President—Dr. T. A. Allen, Brockville.

Secretary-Treasurer—Dr. A. E. James.

Additional members who, with the officers, form the Council—Drs. P. J. Lynchke, Carp; T. Thacker, Renfrew; W. C. McGuire, Cornwall; Geo. W. Higginson, Rockland; F. Fisher, Carleton Place; J. B. Hollingsworth, W. W. Boucher, and C. H. Higgins, Ottawa.

Dr. C. H. Higgins was elected official reporter for the Association.

The question of holding a midsummer meeting was discussed, a cordial invitation being extended to the Association to hold this meeting in Brockville, by Dr. T. A. Allen, of that city. As a special inducement for the acceptance of his offer Dr. Allen gave a brief *resumé* of the many and varied trips by water which could be taken from Brockville and that these would furnish a pleasant outing and great relief from the dull routine of practice. This invitation was supplemented by Dr. McAlpine, also of Brockville, in a few well chosen remarks.

Dr. Rutherford was called on by the President to give a re-

port of the meeting held in Toronto on the 19th inst., which had as its object the organization of the profession in Ontario, with a view to obtaining legislation, that the profession might occupy a more enviable position than is the case at the present time. Dr. Rutherford stated that the meeting was enthusiastic and he was very hopeful of results. A circular had been issued and would in the course of a few days be received by all veterinarians in Ontario, appealing to them for their personal influence and financial assistance in the work. As one of the details of organization, county associations were to be formed, as they would be better able to reach individual practitioners in the outlying districts. He also mentioned that there was already a fund of three hundred dollars subscribed and in the hands of the Treasurer for the prosecution of this work. The subject of the affiliation of the Central Canada Veterinary Association and the various county associations with the Ontario Veterinary Medical Association was discussed, though no definite action was taken toward this end by the members of the organization committee.

Dr. Allen, also a member of the organization committee and a delegate of the Central Canada Veterinary Association, was called upon. His remarks were along the lines already outlined by Dr. Rutherford.

The following, a motion proposed by Dr. T. Thacker, of Renfrew, was endorsed by the Association: "I move that the action of our delegates be endorsed and that this Association desires to place on record its hearty approval of the movement now on foot for the organization of the veterinary surgeons in Ontario."

The financial statement rendered by the Treasurer, Dr. W. W. Boucher, indicated a balance of about sixty dollars after the payment of all outstanding bills.

Presentation of Papers.—Dr. J. B. Hollingsworth, of Ottawa, presented a paper the title of which was "Navicular Disease."* In this he technically described a portion of the anatomy of the part, that the relationship between the bones and other structures, with their functions, might be more easily understood. The symptoms and treatment of this disease were given in detail, indicating the cases which would show beneficial results from operations. A spirited discussion followed, during which there were many favorable and adverse criticisms of the treatment

* Will be published in any early number of the REVIEW.

employed by Dr. Hollingsworth. Among those taking part in this discussion were Drs. Lynchke, Fisher, Haworth, Allen, McGuire, W. C. Young, and Rutherford.

The next paper was that of Dr. A. E. Moore, on "Contagious Abortion in Cattle."* The history of the disease, a brief *resumé* of the scientific observations of various investigators, the course, symptoms and treatment were entered into minutely. The discussion, which was deferred till Thursday morning, indicated that there was scarcely a practitioner present who had not been called upon to deal with this affection. Dr. Rutherford stated that the loss to the live stock industry from this one disease alone was appalling, but from its insiduous nature and the difficulty in dealing with it rendered it impossible for governments to schedule the affection with the other contagious diseases. Almost everyone present had had experience with this affection, and the treatment recommended by the essayist, consisting in complete disinfection of the stable, the animal, and the burning of the fœtus and afterbirth, seemed to be successful.

Dr. James' paper on "Capped Elbow, or Shoe-Boil,"* detailed the history and causes of this affection. The treatment, mainly surgical, was described in full, indicating the various methods practiced by different operators. The discussion brought out many points of interest to the practicing veterinarian, and in the main substantiated the views advanced by the essayist. The treatment of bursal enlargements was also brought out by the discussion, and the methods of treatment employed by various members was given in detail. A very ingenious device, consisting of a curved clamp to take in the part, with a hinge and screw, was described by Dr. Rutherford as being the instrument used by a certain quack. By properly placing so that the enlarged part was separated from the elbow and giving the screw a few turns each day the tumor was easily removed in a manner similar to that accomplished by an elastic ligature and the position of the clamp was much more easily controlled. The idea is a good one and the necessary appliance easily made. Excising with a knife is painful, and it was shown that the hæmorrhage is at times rather difficult to manage. In discussing this subject the question of the treatment of bursal enlargements, was brought up. In this discussion on bursal enlargements various methods of treatment were given. Dr. Lynchke gave his method, which has certain new features. He has pre-

* Will be published in an early number of the REVIEW.

pared a specially constructed firing iron, consisting of a piece of metal about the size of a hen's egg, into which he introduces a platinum wire, about the size of a knitting needle. With this he punctures the enlargement, making four or five holes. Through these holes the synovial fluid oozes very gradually. After puncturing with the iron he blisters with a counter-irritant, consisting of iodine, potassium iodide and biniodide of mercury. He reports that his treatment is invariably beneficial and usually results in a complete cure. It is absolutely necessary to use a platinum wire, as this metal when hot makes a clean puncture, leaving no foreign matter behind, as is the case with a steel or iron wire. Also the platinum does not adhere to the tissue in its passage into the enlargement.

Dr. C. H. Higgins presented a paper, the subject being "The Laboratory and the Veterinary Practitioner."* In this he explained the manner in which the practicing veterinarian received benefit from laboratory investigation, the general lack of proper autopsies and consequent loss to investigators of valuable material, and that the investigator and practitioner were dependant on one another.

After attending to a few business matters, the meeting adjourned at 1 P. M. C. H. HIGGINS, *Reporter.*

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held at Hotel Hartford, Hartford, Tuesday, February 2, 1904, and was called to order at 12 o'clock, with the President, Dr. H. Whitney, in the chair. The following members and visitors were present: Drs. E. C. Ross, Geo. H. Parkinson, Thomas Bland, A. Hyde, H. Whitney, H. E. Bates, J. H. Gardner, L. B. Judson, G. T. Crowley, W. P. Barnes, C. R. Witte, F. G. Atwood, F. A. Ingram, F. G. McGuire, P. F. Finnegan, F. F. Bushnell, Chas. L. Colton, J. H. Kelley, B. K. Dow, R. P. Lyman, W. H. Carley-Baker. Visitors: Drs. Thos. J. Lee, H. C. Balzer, Geo. L. Elliott, G. E. Corwin, Jr., C. L. Adams, and Dr. B. D. Pierce, of Springfield, Mass., member of the Massachusetts Veterinary Association.

After the roll-call, the minutes of the previous meeting were read and approved.

A communication was read from Dr. John R. Mohler, solicit-

* Will be published in an early number of the REVIEW.

ing funds to aid in the erection of a suitable monument to commemorate the work of the late Professor Nocard. Dr. Andrew Hyde made a motion that the Association contribute the sum of ten dollars to the fund for the Nocard memorial. Dr. Hyde's motion was seconded and carried.

The Secretary's report was read and accepted.

The Treasurer, Dr. Ross, reported a balance of $43.41. The report was accepted.

The following applications for membership were received and referred to the Board of Censors: G. E. Corwin, Jr., D. V. S. (U. S. College of Vet. Surgeons); C. L. Adams, D. V. S., Danielson (American Vet. College); Thos. J. Lee, East Granby (American Vet. College); H. C. Balzer, V. M. D., Meriden (Vet. Department U. of P.); Geo. L. Elliott, V. S., Bristol (Ontario Vet. College.) At the motion of Dr. Kelley, it was voted to suspend the By-Laws at this meeting, and allow the Board of Censors to act upon what work they had before them, and to report at this meeting.

The following officers were elected:

President—Dr. H. E. Bates.

First Vice-President—Dr. J. H. Gardner.

Second Vice-President—Dr. L. B. Judson.

Secretary—Dr. B. K. Dow.

Treasurer—Dr. E. C. Ross.

Board of Censors—Drs. F. A. Ingram, R. P. Lyman, G. F. McGuire, R. D. Martin and F. F. Bushnell.

At 1.30 the meeting adjourned for dinner.

After dinner the members were invited to visit Drs. Colton and Lyman's hospital, where a few cases were in waiting for their inspection. After examining the cases the meeting reconvened at 3 o'clock.

Under the head of "New Business," Dr. Dow presented the following resolution:

"WHEREAS, J. E. Hodgins and T. H. Hasket, in London, Ontario, Canada, under the *nom de plume* of a Veterinary Correspondence School, are issuing a fictitious 'diploma,' to illiterate horsemen, stable-boys, farmers, and others of the same class, thereby enabling them to deceive the public, disgrace the veterinary profession, and become worthless and unprincipled quacks, which are dangerous to the live-stock interests in the localities where they work.

"*Resolved*, That the Connecticut Veterinary Medical Association expresses its strong disapproval of this so-called corre-

spondence school, whose principal object is to obtain money out of the ignorance and cupidity of unprincipled fakers. And be it further

"*Resolved*, That this Association through its members use its best efforts to enlighten the public and live-stock owners of the State as to the true nature of these empirics holding and trying to practice with a mail-order diploma."

This resolution elicited quite a lively discussion; some of the members wanted to strike out certain clauses, while others wished to add amendments. The resolution was finally accepted as read and ordered to be spread upon the minutes as a part of the records of the meeting.

On a motion made by Dr. Gardner, it was voted that the President appoint a committee of five members to act with him and the Secretary as a Legislative Committee, to frame and introduce a bill to the next Legislature to regulate the practice of veterinary medicine, and that the committee report at the next meeting. The President appointed Drs. R. P. Lyman, Thos. Bland, E. C. Ross, J. H. Gardner and G. F. McGuire as the committee.

Dr. Bland offered a resolution as follows:

"*Resolved*, That the Connecticut Veterinary Medical Association urge upon the Connecticut Humane Society, that they frame a law to present to the next Legislature which will give them more power and better control of contagious and infectious diseases, especially glanders, in this State. That the Secretary send a copy of this resolution to the Secretary of the Humane Society."

It was voted that the resolution be adopted.

Dr. Ross read a report of the operations that were performed at the semi-annual meeting. The report showed that all of the operations were successful and that good results were obtained in all of the neurectomy operations, excepting one, which still continued to go a little lame. The doctor said in this case the lameness was due to a mechanical interference produced by ankylosis and not from any fault of the operation. He also said that all of the work done at the clinic turned out well and that this, the first clinic, was a great success.

Dr. F. A. Ingram, one of the Board of Censors, read a petition which had been presented to the Board some time ago. The petition was as follows:

"To the Honorable Board of Censors, Connecticut Veterinary Medical Association: We, the undersigned members of

the Connecticut Veterinary Medical Association, knowing that Dr. F. C. Atwood, of New Haven, Conn., has flagrantly and habitually violated the Code of Ethics of said Association, and believing that his acts are contrary to its aims and purposes, and detrimental to the moral standing of the profession before the public, ask that the matter be investigated at once by the Board of Censors."

The petition was signed by eight members. Dr. Ingram said the Board had complied with the request to investigate the non-professional acts of Dr. Atwood, and that they found that he had wilfully violated the Code of Ethics of the Association in several ways, such as undercharging and speaking disrespectfully of other members, advertising specific plans of treatment, advertising through the medium of posters, bills, photographs of his operations, which he had posted in stables, on fences, buildings, etc., inserting newspaper puffs, etc. Also that he had tried to injure the character and the professional standing and reputation of other members for his own advancement. He said that Dr. Atwood had been warned to desist in doing such work, but he still continued in the practice of violating all rules of professional etiquette and common respect, and that the Board was unanimous in recommending that F. G. Atwood be summarily expelled from membership in the Association. The President inquired if there was anything to be offered in defence of Dr. Atwood, or his acts, as charged by the report of the Board of Censors. Dr. Atwood was present at the morning session, but not present when called for. One of the members said Dr. Atwood knew his case was to be investigated at the afternoon meeting, and that he believed Atwood had no defence to offer, as he had gone home knowing that his case was to be called. Several members expressed themselves as being sorry that Dr. Atwood was not present to hear what was said, and offer some excuse for his acts. But, as much as they regretted having such matters occur which would necessitate the expulsion of a member, they thought that some action should be taken by the Association to protect the members and stop such disgraceful work in the Association.

A vote by rising was taken on the matter. Every member arose to his feet and remained standing, while the President declared a unanimous vote that Dr. Frank G. Atwood be expelled, and ordered that his name be stricken from the roll of membership in the Association.

A vote of thanks was tendered Dr. Whitney, the retiring

President, for his efficient services to the Association the past year. Dr. Whitney addressed the members, saying that the Association was now in a better and more prosperous condition than since its organization, and he hoped that it would grow and continue to prosper. He thanked the members for the honor they conferred upon him a year ago, and for their assistance, kind and courteous treatment during his term of office and he wished the same for his successor.

Dr. R. P. Lyman said he would start the discussion of parturient paresis or so-called milk fever, by describing his treatment with oxygen. The doctor stated that he had treated several cases the past year with oxygen, obtaining the most happy results. One member asked Dr. Lyman how he thought oxygen would work in treating azoturia in horses, to which he replied that he thought if some place in the horse could be found where the gas would be absorbed into the system that it would work well. An interesting discussion followed Dr. Lyman's remarks.

Dr. Thos. Bland invited the Association to hold its next meeting in Waterbury, as he had all the conveniences, and would have plenty of material on hand for a good clinic and a nice lively meeting. It was voted to hold the semi-annual meeting in Waterbury at Dr. Thos. Bland's hospital, Tuesday, August 2, 1904.

At 6 o'clock the meeting adjourned.

B. K. Dow, *Secretary.*

MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held Jan. 13th, 1904, at the West End Hotel, Portland, with President Salley in the chair.

At roll-call the following members responded: Drs. Wescott, Salley, Joly, Lord, Pope and Blakely.

The minutes of two previous meetings read and approved.

This meeting being the one for the election of officers, the election resulted as follows:

President—Dr. F. W. Huntington, Portland.

Vice-President—Dr. Lemuel Pope, Portsmouth, N. H.

Secretary—Dr. C. L. Blakely, Augusta.

Treasurer—Dr. W. S. Lord, Portland.

After election of officers the members present had the pleasure of listening to a very able address by the retiring President, Dr. Salley. The doctor spoke as follows:

"Upon retiring from my place as President of this Associa-

tion for the past two years, it seems fitting that I should thank you for the high honor you have bestowed upon me, by giving me the highest office within the Association. In relinquishing it to my successor it is proper that I should express a few thoughts to you, not because I have anything new, but that by certain combinations of old thoughts I may express new ideas to some of you. We all have an influence, be it little or much, either for or against, and at this time and for all time I wish to exert what little power I have towards the advancing and raising to a higher standard veterinary medicine, particularly in the old Pine Tree State. It seems to me here is where we most need advancement and certain laws to regulate the practice of veterinary medicine. Quackery flourishes here with freedom, entangling its victims with its cunning and deceptive but erroneous schemes. When I speak of quacks I do not wish to be understood to mean men without diplomas in all cases. Quackery may be practiced by men holding diplomas as well as those without; and, again, a man may be well up in a profession without having taken a collegiate course, and consequently without a diploma. In this connection think of Alexander Pope, a dwarf and an invalid, never able to walk a step, and unable to attend school, yet he became one of the most scholarly and profound thinkers the world has ever known. Diplomas have been and are probably being received from some sources by being bought, and so do not stand for a certain amount of proficiency. Because of these things and many others, it is high time that this State established a veterinary medical examining board for the purpose of obtaining knowledge of and discarding those who have not a reasonable amount of knowledge in the practice of veterinary medicine, whether they hold diplomas or not. Other professions in our State have their examining boards, and there are none of them that need it as much as ours. There are none in which there are so many foolish and cruel ideas practiced as in veterinary medicine. Many times it has made my heart ache to see the suffering and pain our poor dumb and domestic animals are subject to under the pretense of treating disease. I received a letter from a man in the town of Embden the other day, saying he had a cow with the 'horn ale,' that he had bored her horns and was putting vinegar, salt and pepper in them, and wanted to know if I could suggest any other treatment. I replied that it was a disease I had never seen and knew nothing about; that it was like weaning your calves and castrating your colts, when the

sign was right—all poppy-cock. Upon receiving my letter he at once sent for me to come and see the cow. I found that the real cause of the cow's trouble was a retained placenta; pus was bubbling from the holes in the horns, as a result of the inflammation the quack had set up by his hot stuff, which had probably reached quite a part of the mucous membrane lining the sinuses. This is only one of hundreds of cases I have met in my practice, where 'horn ale' or some other imaginary disease has been treated in just as foolish way by some so-called 'cow-doctor,' to the detriment and discomfort of the cow. Many of their methods are so absurd that it is strange they should be tolerated at this late day of advancement in knowledge and science. It is high time something should be done in the line of prevention. I believe we are progressing slowly in this direction each year. I believe that the veterinary medical profession in the State of Maine is stronger than ever before.

"Our American Veterinary Medical Association is a strong body, and exerts a powerful influence in the right direction. Our Bureau of Animal Industry is more efficient than ever before. Many states have passed registration laws and others are about to pass them. This is a strong reason why we should have a registration board at once, because many of these men turned out of the other states will find their way here, unless there is something to prevent. But the wheel of advancement is rolling; it is coming our way, and when it gets to our border let us each and every one be ready and willing to put our shoulder to it and see that it does not stop until it is well across to the Canadian line, and may it leave a trail as deep and lasting as Arnald's Army in its endeavor to reach Quebec years ago.

"It is well for each of us to look well to our private practice and to see that the remunerative part is sufficient for the comfort of our families, etc., but ever and uppermost in the mind of every veterinarian should be the advancement of his professsion. We are too apt when called upon to sacrifice something in the way of time and money for the good of our profession to be too selfish and look to see where we are going to be directly benefited, and if we cannot see that it is going to directly benefit us we will be half-hearted in our efforts. But we are each reaping the fruits from the seeds sown in the past by unselfish veterinarians. The old man, when accosted because he was planting apple trees, the fruits of which he could not hope to eat, replied, 'Some one must have planted trees before I was born, else I could not have eaten the fruits.' The child can never make full

return to its mother whose life trembled in the balance at its birth, and whose kindness and care guarded it in all the years of its infancy. The student cannot make full returns to the teacher who awakened the mind and aroused the ambition for a broader intellectual life. The adult cannot make full returns to the patriarch whose noble life gave inspiration and incentive, but they must make their returns to the generation which comes after them. And so we cannot make returns to the veterinarians gone before or to our teachers. But we must make returns for the good they have done us to the veterinarians who follow us, by doing all we can unselfishly and with a free heart at any and all time for the advancement of our profession."

Next on the programme was an essay by Dr. Geo. F. Wescott, of Portland, entitled "Laminitis,"* and the subject was handled in a masterly way, and called forth a good deal of discussion.

Dr. L. Pope, Jr., from Portsmouth, N. H., read a very interesting paper entitled "A Few Cases of Parturient Paresis," in which he discussed at some length the new treatment with oxygen gas and also the potassium iodide treatment, and different treatments used by him in the last seven or eight years. This paper was an exceedingly valuable one to us, as we all have quite a good many cases of parturient paresis during the year, and many interesting features were disclosed during the discussion which followed.

After the reading of papers a long discussion followed on the methods to be pursued in an attempt to procure the passage of a veterinary registration bill to be presented at the next Legislature, and the members listened to some good sound advice from Dr. Pope, who has had considerable successful experience in obtaining a veterinary registration law for our sister State, New Hampshire, and everybody felt encouraged to try again and keep trying until we succeed in obtaining what we need in Maine.

Afterwards the members adjourned to the hospital of Dr. G. F. Wescott, where a very interesting clinic was held on some cases in the doctor's canine practice, in the line of ovariotomy, radical operation for eversion of uterus, and practical methods of trimming the ears and tail. This clinic was one of the most interesting the Association has ever held, and many new and valuable points were brought out.

*Will be published in an early number of the REVIEW.

The meeting adjourned at a late hour, after voting to meet in Waterville in April. C. L. BLAKELY, M. D. V., *Secretary.*

ILLINOIS VETERINARY MEDICAL AND SURGICAL ASSOCIATION.

This Association met in annual session at the St. Nicholas Hotel, Jan. 13, with President V. G. Hunt, of Arcola, in the chair, and the roll-call showed a good average attendance. The minutes of the previous meeting were read and approved.

President Hunt next delivered his annual address, which was full of wholesome facts and well wishes for the future of the Association.

The election of officers being next in order, the following were chosen for the ensuing year:

President—Dr. F. J. Bliss, Earlville.

First Vice-President—Dr. W. E. Dawson, Lovington.

Second Vice-President—Dr. I. M. Luzader, Nokomis.

Secretary—Dr. W. A. Swain, Mt. Pulaski.

Treasurer—Dr. V. G. Hunt, Arcola.

President-elect Bliss appointed standing committees as follows:

Committee on Membership—Drs. Travis, J. M. Reed, S. H. Swain, and I. M. Luzader.

Committee on Programme—Drs. F. J. Bliss, S. H. Swain, and W. A. Swain.

Committee on Arrangements—S. H. Swain and F. J. Bliss.

Committee on Legislation—S. H. Swain, C. A. Hurlbutt and F. J. Bliss.

The following papers were read: "Canine Distemper," by Dr. A. Travis, of Litchfield, a very complete and interesting as well as instructive essay, and was responded to by Drs. W. J. Martin and I. M. Luzader; "Contagious Ophthalmia" (Bovine),* by Dr. F. J. Bliss, of Earlville, was an excellent paper and was responded to by Dr. S. H. Swain and others; "Open Joint," by Dr. Jas. M. Reed, of Mattoon, was read by the Secretary, Dr. Reed being unable to be present on account of sickness in his family. This was a good paper and occasioned considerable discussion and comment.

Jan. 14—Meeting called to order by the President.

"Diagnosis of Lameness in the Horse," by Dr. W. J. Martin,

* Will be published in an early number of the REVIEW.

of Kankakee, was a most interesting paper, which called forth considerable discussion. Dr. Smith, of Finley, a visiting veterinarian, entertained the Association by the reading of a paper which had been read before the Southern Illinois Veterinary Association.

Under the head of "Reports of Cases" many interesting subjects were introduced and discussed at length.

Dr. F. J. Bliss reported a case of "Fungosis Toxicum Paralyticus" in a mare which was unable to stand when he saw her. She was treated by the Swain method of injecting ammonia intravenously, and was able to rise to her feet in twenty-five minutes from time of first injection.

On motion, the location of next meeting was fixed for Decatur in August, at such date and place as the Committee of Arrangements shall choose.

On motion the meeting was then adjourned.

W. H. SWAIN, *Secretary.*

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at Dr. J. Payne Lowe's office and veterinary hospital, Passaic, N. J., on Tuesday evening, Feb. 2, 1904, with President Wm. Herbert Lowe in the chair. The members present at the meeting were Dr. J. H. Degraw, Dr. Wm. H. Lowe, Jr., Dr. Wm. Herbert Lowe, Dr. Wm. J. Regan, Dr. Geo. W. Pope, Dr. R. O. Hasbrouck, Dr. J. Payne Lowe and Dr. Wm. J. Fredericks. Associate members present were Dr. J. B. Hopper, Ridgewood, and Dr. R. W. Meiners, Union Hill, N. J.

The minutes of the last meeting were approved as read.

The Secretary was instructed to communicate with the Treasurer and find out if he had forwarded the five dollars to the Prof. Nocard Monument Fund, which had been donated for that purpose. The Secretary reported bills for stationery, which were ordered paid.

Dr. Wm. Herbert Lowe made a motion that Dr. R. F. Meiners be a regular Associate Member of the Association, which was carried unanimously.

Dr. J. Payne Lowe performed ovariotomy on a bitch, which was very successfully done, and then gave a demonstratian on using a mouth speculum in the dog, and passing a probe down the dog's throat to find any foreign substances that might be lodged there.

Dr. J. B. Hopper gave a demonstration on setting up a horse's tail after docking, and also of straightening a horse's tail that is carried to one side or the other.

Naso-œsophageal intubation in the horse was demonstrated by Dr. Geo. W. Pope. Before attempting the operation, Dr. Pope stated his desire that all present should understand that the operation was not original with him; that at a meeting of the Illinois State Veterinary Medical Association, held in Chicago last December, he heard an interesting discussion on the subject of acute indigestion, and that Dr. Joseph Hughes, of Chicago, at that time expressed an opinion that a tube could be passed through the nasal chamber into the stomach of the horse and relief in this way be afforded. At a clinic following the discussion, Dr. Hughes had passed the tube without difficulty, and without assistance. "My aim will be," said Dr. Pope, "to demonstrate what was done by Dr. Hughes at that clinic. This will be my first attempt at passing the tube, and in case it does not reach the stomach, I beg you to remember that it is an experiment as far as I am concerned." A ten-foot rubber tube was then produced, and without assistance passed by the demonstrator through the right nostril of the subject and into the stomach. Some thought that the tube had passed farther than the lower third of the œsophagus. However, Dr. J. Payne Lowe produced a force pump and injected two gallons of water into the stomach and siphoned it out with a considerable quantity of the stomach's contents. A discussion followed the demonstration, and Dr. Pope was requested to repeat the operation at the next meeting of the Veterinary Medical Association of New Jersey.

Dr. Wm. Herbert Lowe made a motion that a vote of thanks be extended to the chief operators, Dr. J. Payne Lowe, Dr. J. B. Hopper, and Dr. Geo. W. Pope, which was seconded and carried.

There was a motion made, seconded and carried, that our next regular monthly meeting should be held in Paterson at Dr. Wm. Herbert Lowe's office, at 169 Paterson Street, March 1, 1904.

As there was no other business to bring before the meeting, the Association adjourned. WM. J. FREDERICKS, *Secretary.*

KANSAS STATE VETERINARY MEDICAL ASSOCIATION.

SALINA, KANSAS, February 18, 1904.

Our meeting to effect a State organization was a grand success, there being a very good attendance. We met in the City

Council Chambers in Topeka, and adopted a Constitution and elected officers for the coming year, as follows:

President—Dr. George Pritchard, of Topeka.

Secretary—Dr. Hugh S. Maxwell, of Salina.

Treasurer—Dr. W. T. King, of Olatha.

Executive Board—Dr. D. O. Krusely, Topeka; Dr. T. W. Hadley, Kansas City, Kan.; and Dr. C. B. McClellan, Laurence.

We are to have a Vice-President from each Congressional District, but at present have elected only Dr. C. A. Monney, of Hiawatha, from the First, and Dr. C. B. Kern, of Beloit, from the Sixth Districts.

We start out with fifteen members, but are receiving communications almost every day from veterinarians over the State, asking for information in regard to becoming members. There are about one hundred eligible veterinarians in the State, and we hope none will fail to join with us, at their earliest possible convenience. There is no reason why we cannot have a very good organization and a grand annual meeting in January, 1905, if each one will only do his part. The Kansas stock-grower is badly in need of protection from the abuse he is receiving at present from many quacks operating in the State. The State is now ready for something of this kind, and it is our just duty to lend our united effort in securing something beneficial.

We hope every veterinarian in the State will show the interest, and take hold of the work in as earnest a manner as did Dr. Moore, of the K. C. V. C.; he was at the January meeting, and was ever ready to assist us in any and every way possible, for which we thank him very much, and hope he will be with us again at our first annual meeting to be held in Topeka, January, 1905. HUGH S. MAXWELL, *Secretary.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this Association was held at the Whitcomb House, Rochester, N. Y., on Thursday, Jan. 14th, 1904, and, in spite of the inclement weather and the bad condition of the roads, a large percentage of the members were present.

The meeting was called to order by the President, Dr. O. B. French, of Honeoye Falls, and the minutes of the previous meeting were read and approved.

The report of the Treasurer showed the Association to be in good financial condition.

The application of Dr. Joseph L. Wilder, of Akron, N. Y., was presented and referred to the Board of Censors.

The following officers were elected for the ensuing year:

President—Dr. G. C. Kesler, Holley.

Vice-President—Dr. A. McConnell, Brockport.

Secretary—Dr. J. H. Taylor, Henrietta.

Treasurer—Dr. A. Geo. Tegg, Rochester.

Board of Censors—Drs. L. R. Webber, O. B. French, W. E. Stocking, H. S. Bebee, J. E. Smith, and J. W. Corrigan.

Drs. D. P. Webster, of Hilton; W. G. Dodds, of Canandaigua, and J. W. Corrigan, of Batavia, were appointed to look up illegal practitioners and report at the next meeting.

After the formal seating of the new officers, Dr. H. S. Bebee read a very interesting paper on his own observations on "Navicular Disease," which was followed by a lively discussion.

Dr. Carr Webber reported a very interesting case of impaction of the cæcum, which brought forth many different ideas as to treatment.

Dr. J. H. Taylor read a paper on "The Use and Abuse of Cathartics in the Treatment of the Various Forms of Colic."

The next meeting of the Association will be held in Rochester in July. This meeting will be taken up largely with clinics, and an informal discussion on the various cases presented for operation or treatment.

Drs. L. R. Webber, J. H. Taylor and J. E. Smith have charge of the programme for this meeting.

J. H. TAYLOR, *Secretary.*

RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this Association was held at the Hotel Dorrance, Providence, R. I., Jan. 28th, 1904. The meeting was called to order at 3.30 P. M. by Vice-President Dr. L. T. Dunn, and upon roll-call nearly every member responded to his name. The minutes of the previous meeting were read and approved.

The first business was the report of the Committee on Legislation. The Committee in making their report, explained what, in their estimation, caused the defeat of the veterinary bill presented to the legislature last February, and also stated that they positively refused to serve the Association further in this capacity.

The election of officers resulted as follows:
President—Dr. J. S. Pollard.
First Vice-President—Dr. L. T. Dunn.
Second Vice-President—Dr. R. L. Tucker.
Secretary—Dr. T. E. Robinson.
Treasurer—Dr. J. T. Cunningham.

It was moved and carried that the officers of the Association constitute an Executive Board. The Legislative Act was placed in the hands of the Executive Board, with power to proceed.

It was voted that the Chair appoint a committee of three to confer with the Master Horse Shoers' Association, relative to the proposed veterinary bill.

After a somewhat lengthy discussion on various subjects of interest to the profession, it was voted to adjourn.

Next regular meeting June, 1904, at Providence.

T. E. ROBINSON, *Secretary.*

NEWS AND ITEMS.

DR. ROBT. LEEPER, Inspector B. A. I., Kansas City, has been transferred to Wichita, Kans.

DR. WALTER WARREN, of Windsor, Mo., is taking a post-graduate course at the Kansas City Veterinary College.

DR. F. W. WESTON, Inspector B. A. I., Wichita, Kans., has been transferred to Kansas City.

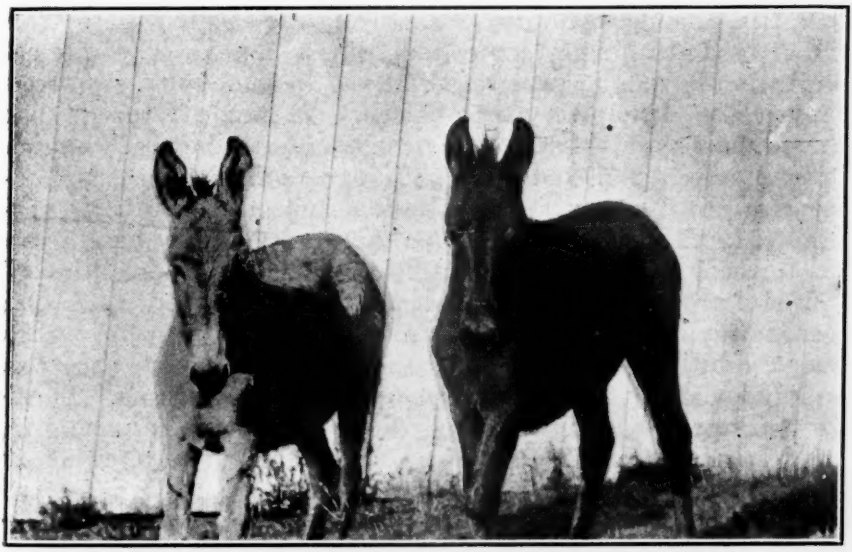
DR. A. W. SMEDBERG, Inspector B. A. I., Kansas City, met with a painful accident recently, slipping on an icy pavement and breaking his leg above the ankle.

DR. FRANK STARR, who served two years in the Quartermaster's Department, U. S. Army, Philippines, has returned and entered into practice in his home-town, Odessa, Mo.

RECENT MEDICAL ADVANCES.—A cablegram to the New York *Herald* of Feb. 27, says: "Dr. Doyen has just communicated to the Académie des Sciences a monograph on a method of cancer treatment based on an injection of a toxine microbe known as micrococcus neoformans. . . . . Twenty-one cases, it is claimed, were cured by means of the injection, and forty-seven more cases are under observation. At a meeting of the Academy of Sciences Professor Berthelot communicated the results of fresh experiments with radium by Dr. Phisalix at the Museum. After fifty-eight hours' exposure to the action of a

tube of radium the venom of a viper in solution was so affected that a guinea-pig might be inoculated with a strong dose of the poison without the slightest danger. The longer the poison is exposed to the action of radium the weaker it becomes."

AN HAWAIIAN HYBRID.—Dr. W. T. Monsarrat, of Honolulu, H. T., has kindly furnished the following history and photo of an interesting little beast which is the first of his species bred upon those tropical isles: "I send you some photographs of a hinnie and its dam, which were bred by my brother, J. Monsarrat, at the Kapapala Ranch, Hawaii. The dam is a she ass, which are used a great deal on the Island as pack ani-



mals; the sire is a thoroughbred, by The Mallard, he by Fellowcraft—Teal; Fellowcraft by Longfellow. The colt is six months old and is at least a hand taller than its dam, as you can see by the photographs. There is quite a difference between the looks of the dam and colt. I was the photographer. This is said to be the first animal of this kind on the Islands."

TO CAPTURE THE WHITE PACERS.—*Salt Lake, Utah, Feb. 13.*—Strangest of all equine bands, the "white pacers" of the southern range, are doomed to captivity or extermination. The ranchmen of Southern Utah, Western Nevada and a strip of Arizona have passed sentence on this remarkable aggregation of one hundred wild horses that for seven years have mocked every effort at capture. The stockmen of the border country

engaged a few weeks ago in a wild horse hunt—a raid on the wild mustangs that have become a pest of the range. Many animals were killed, but the "white pacers" were not met. Even if the opportunity had presented itself no attempt to kill them would have been made. The ranchmen have for years cherished the hope of some day capturing some of the beautiful animals, and so none have ever been shot. Individual attempts to take them, however, have always failed, and now an organized and determined effort is in project. Plans have been made with a full knowledge of the habits of the quarry and the nature of the country, and it is hoped that a dozen or more of the coveted equines will be taken. If necessary, several of the horses will be killed to make the work of capturing the others easier. The much desired animals are of magnificent build. They are all white and have long manes and tails of the same color. In speed they easily outstrip the ranch horses. A strange feature is that the animals are all pacers. Very seldom have they been known to break into a run, and then only for a short distance, soon relapsing into the long, swift stride that appears to be their natural gait. The ranchmen believe that some of these animals can be trained to become great racehorses. A great stallion, of splendid proportions, is the leader of this equine family. At the head of the band this stallion has led his followers in wild dashes over the hills when pursued by the ranchers, and the pace was so rapid that the hunters were soon compelled to desist. These horses are reported to be ranging along the Colorado river. In the summer they come up into Utah. It is planned to effect their capture by having several parties act in concert and drive the horses into a trap—probably into a box canyon.—(*New York Herald.*)

UNIFICATION OF VETERINARY AUTHORITY IN CANADA.—The resignation of the Provincial Veterinarian for Manitoba, after some twelve years or more of faithful, well-rendered service, makes the time opportune for the transfer of the handling of contagious diseases of animals to the Dominion by the Manitoba Government. This move was suggested in the *Advocate* at the time of the change in the chief inspectorate at Ottawa about two years ago. Since the work has been attended to in the Province by Dr. S. J. Thompson there has been marked improvement in the control of contagious diseases of animals, obtained at less expense than when the district veterinarian scheme existed, and since the office has been vested in one man we have ceased to hear of glanders in cows (!) Under the new

Dominion Act of August last, the control of contagious diseases in animals becomes fully vested in the veterinary branch of the Department of Agriculture at Ottawa, and there is now nothing to be gained by the continuance of the office of Provincial Veterinarian. The lack of a head to whom the outlining of a veterinary policy could be referred, and the saving of expense, as well as the uselessness of a duplication of work by officials, are all cogent reasons for the abolition of this office in the Province. There is no doubt but that use can be found for the money saved right in the Provincial Department of Agriculture. Last year's report of the Provincial Veterinarian shows the number of cases of glanders (that seemingly being the most important animal contagious disease met with) attended to, and the supposed sources of contagion are hinted at, the inference being that there is yet a weak spot to be strengthened in the work of the veterinary branch of the Dominion Department of Agriculture; whether the breach in the ramparts is at the boundary ports or in the interior is apparently unsettled. The veterinarians of the N. W. M. P. attend to the handling of contagious diseases of animals in the territories for the veterinary branch, and are believed to render the most efficient service at the least cost of any section of the branch. Should the transfer be made as suggested, a strengthening of the whole service may be expected, and the possibility of one Province infecting another with impunity be stopped. All the men in different Provinces being placed under the one head will certainly make for increased efficiency of the whole, one result of which will be the extermination of glanders throughout the West. No compensation is paid by the Dominion Government for glandered horses; in hog cholera, compensation at the rate of one-third value for diseased hogs slaughtered by the inspectors and three-fourths for the cohabiting swine free from disease and slaughtered by inspectors is paid. It is questionable whether it would not be better to abolish the system of compensation altogether, or else place the diseases on an equal footing as regards the giving of compensation. Some hold that compensation is an inducement to people to reveal the presence of a contagious disease in their stock; it is well to remember that under the Act severe penalties may be enforced for concealing such diseases!—(*Farmer's Advocate, Winnipeg, Feb. 10.*)

VETERINARY STUDENT'S BANQUET AT ITHACA.—The first annual banquet of the New York State Veterinary College, Cornell University, was held on the evening of Feb. 10, at the

Campus Tavern, Ithaca. Sixty-two students, members of the faculty and a few alumni partook of the feast. The after-dinner speakers were introduced in an able manner by the toastmaster, W. B. Mack, '04. Dr. James Law, in a humorous, instructive way, described the veterinarian of the past. Dr. W. L. Williams revealed the veterinarian of the present. Dr. G. S. Hopkins made a strong plea for a four year course in the college. Dr. P. A. Fish, in light vein, but with seriousness, spoke on the benefits to be derived from coöperation, and Dr. V. A. Moore prophesied for the scientific attainment and the high position to be taken by the veterinarians of the future, who should build on the foundation laid by such men as Dr. Law. The student body was represented by A. M. Seaman, '04; C. H. Taylor, '05; and W. J. Taylor, '06; and Dr. Garry T. Stone, of Binghamton, spoke for the alumni. Comic and college songs interspersed the toasts, and at a late hour the company scattered, with a firm resolve to make this the first of a series of pleasant and profitable annual gatherings.

LOSS OF HOOFS FROM NEUROTOMY.—Dr. A. W. Baker, of Brasher Falls, N. Y., writes under date of Feb. 1: "I notice an article in the December REVIEW by Dr. John J. Repp on the loss of hoofs from plantar neurectomy for navicular arthritis. I am surprised, for I always select those kind of feet for a successful operation. I would like to know if there were corns in those two feet. I am greatly interested in those operations. I have operated on a great many horses, some used in livery, some on the farm, and some on stage routes, and they are still in service. I try to select good strong hoofs. I always keep them in the infirmary for two weeks after the operation, and do not permit them to be put to hard work until all inflammation has disappeared from the limbs and hoofs, which are kept soft. I would like to hear from others on the subject."

AGGLUTINATION IN GLANDERS.—Heanley has investigated the serum reaction in two cases of glanders, and finds that, while clumping of glanders bacilli is caused by various sera, the sedimentation test, with a dilution of 505 and a time interval of at least four hours, gives positive specific results, no reaction being obtained with any serum but that of glanders. —(*London Lancet, Feb. 6.*)

NOTWITHSTANDING the fact that the present number of the REVIEW contains 132 pages, it must ask the indulgence of many contributors whose valued articles are held over for subsequent issues.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada, so far as obtainable by the REVIEW. Secretaries are urgently requested to see that the organizations which they represent respectively are included in the list, and that the details concerning them are properly stated.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Aug. 16-19, '04.	St. Louis, Mo.	J. J. Repp. 5249 Addison St., Phila., Pa.
Vet. Med. Ass'n of N. J.....	July 14, 1904.	Newark.	G. W. Pope, Athenia, N. J.
Connecticut V. M. Ass'n.....	August 2.	Waterbury.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	September, 1904	Brooklyn.	W. H. Kelly, Albany, N.Y.
Schuylkill Valley V. M. A....	.....	.....	W. G. Huyett, Wernersville, Pa.
Passaic Co. V. M. Ass'n.....	March 1.	Paterson, N.J.	W. G. Fredericks, Delawanna, N. J.
Texas V. M. Ass'n.....	March 9.	Fort Worth.	H. D. Paxson, Ft. Worth.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet Med. Ass'n.....	April, 1904.	Waterville.	C. L. Blakely, Augusta.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	.....	.....	Judson Black, Richmond.
Alumni Ass'n N. Y.–A. V. C..	April, 1904.	141 W. 54th St	W. C. Miller, N Y. City.
Illinois State V M. Ass'n.....	.....	.....	W. H. Welch, Lexington, Ill
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Racine.	S Beattie, Madison.
Illinois V. M. and Surg. A....	August, 1904.	Decatur.	W. A. Swain, Mt. Pulaski, Ill
Vet. Ass'n of Manitoba	.....	.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	July, 1904.	Greensboro.	T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	December, 1904	Toronto.	C H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	1st Wednesday of each month.	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	August, 1904.	St. Louis, Mo.	W. H. Gribble, Washington C. H.
Western Penn. V. M. Ass'n...	1st Wednesday of each month.	Pittsburgh.	F. Weitzel, 100 Parkway, Allegheny.
Missouri Vet. Med. Ass'n.....	Aug. 15, 1904.	St. Louis.	Stanley Smith, Columbia.
Genesee Valley V. M. Ass'n...	.....	.....	J. H. Taylor, Henrietta, N.Y.
Iowa State V. M. Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n..	.....	.....	J. S. Butler, Minneapolis.
Pennsylvania State V. M. A...	March, 1904.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila.
Keystone V. M. Ass'n.....	2d Tuesday of each month.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila
Colorado State V. M. Ass'n...	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	June, 1904.	Undecided.	B. F. Kaupp, 3712 Michigan Ave., Kansas City
Rhode Island V. M Ass'n....	June, 1904.	Providence.	T. E. Robinson, Westerly, R. I
North Dakota V. M. Ass'n....	2d Tues. Jan.	Fargo.	E. J. Davidson, Grand Forks
California State V. M. Ass'n...	Mch. Je. Sep, Dc	San Francisco	P. H. Browning, San Jose.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	H. D. Fenimore, Los Angeles
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	A. T. Peters, Lincoln.
Kansas State V. M. Ass'n....	January, 1905.	Topeka.	Hugh S. Maxwell, Salina.

PUBLISHERS' DEPARTMENT.

Subscription price, $3 per annum, invariably in advance; foreign countries, $3.60; students while attending college, $2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW *in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.*

TALLIANINE continues to win the confidence of American veterinarians in the ratio that they become acquainted with it. New adherents are continually being added to the list who have already expressed themselves in its behalf to Messrs. Sykes & Street, some of which have been reproduced in connection with their advertisement on page 17 (ad. dept.)

SANITAS, in its several preparations, is a standard article in the veterinary field, and holds its own firmly against its many competitors in the field of antiseptics, disinfectants and deodorants.

EIMER & AMEND, the old time drug house, who for half a century have catered to the requirements of veterinary practitioners, are studying their wants just as keenly to-day as they have ever done in the past. Their "Veterinary Glycerine Suppositories" are one of the results of their more recent efforts.

SOMETHING OF UNUSUAL INTEREST TO VETERINARIANS appears on page 4 (ad. dept.) of this issue, as it is something to add to their comfort, and make life more pleasant while engaged in making their daily rounds to their patients, which, after all, consumes the larger part of their active lives. It is a "storm shield" for the buggy, which, while it protects the occupant from the storm, does not restrict his movements and confine him as to space, as is the case with the ordinary storm apron. The company guarantee to refund the money after a ten days' trial if not satisfactory, so confident do they feel of the perfection of their article.

PRACTICE FOR SALE.

Good paying practice for sale, in town of sixty-five hundred, county seat of one of the best counties in Missouri. Address: PRACTICE, care of the REVIEW.

ASSISTANTSHIP WANTED.

WANTED BY VETERINARY STUDENT, position as assistant to practitioner with large country practice, with view to partnership upon completion of course. Address: ASSISTANT, care of AMERICAN VETERINARY REVIEW.

BOUND VOLUMES OF REVIEW FOR SALE.

Volumes XV, XVI and XVII, handsomely bound, for sale. For particulars address: AMERICAN VETERINARY REVIEW, 509 W. 152d St., New York.

REVIEWS WANTED.

Vol. VI, No. 1. Vol. VII, Nos. 3, 4, and 7. Vol. VIII, No. 11. Address: ONTARIO AGRICULTURAL COLLEGE, Library Department, Guelph, Canada.